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JANUARY 1989

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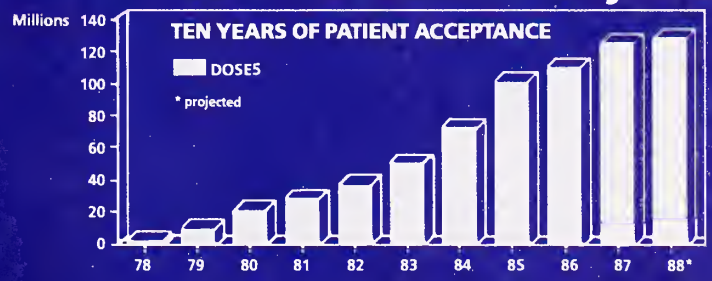

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1. Data on file, Knoll Pharmaceuticals
2. Hopkinson JH III. *Curr Ther Res* 24:503-516, 1978
3. Beaver WT. *Arch Intern Med*, 141:293-300, 1981

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INDICATIONS AND USAGE: For the relief of moderate to moderately severe pain.
CONTRAINDICATIONS: Hypersensitivity to acetaminophen or hydrocodone.
WARNINGS:
Allergic-Type Reaction: VICODIN contains sodium metabisulfite, a sulfite that may cause allergic-type reactions including anaphylactic symptoms and life-threatening or less severe asthmatic episodes in certain susceptible people. The overall prevalence of sulfite sensitivity in the general population is unknown and probably low. Sulfite sensitivity is seen more frequently in asthmatic than non-asthmatic people.
Respiratory Depression: At high doses or in sensitive patients, hydrocodone may produce dose-related respiratory depression by acting directly on brain stem respiratory centers. Hydrocodone also affects centers that control respiratory rhythm, and may produce irregular and periodic breathing. If significant respiratory depression occurs, it may be antagonized by the use of naloxone hydrochloride. (see ADVERSE REACTIONS: Respiratory Depression).
Head Injury and Increased Intracranial Pressure: The respiratory depressant effects of narcotics and their capacity to elevate cerebrospinal fluid pressure may be markedly exaggerated in the presence of head injury, other intracranial lesions or a preexisting increase in intracranial pressure. Furthermore, narcotics produce adverse reactions which may obscure the clinical course of patients with head injuries.
Acute Abdominal Conditions: The administration of narcotics may obscure the diagnosis or clinical course of patients with acute abdominal conditions.
PRECAUTIONS:
Special Risk Patients: As with any narcotic analgesic agent, VICODIN should be used with caution in elderly or debilitated patients and those with severe impairment of hepatic or renal function, hypothyroidism, Addison's disease, prostatic hypertrophy or urethral stricture. The usual precautions should be observed and the possibility of respiratory depression should be kept in mind.
Information for Patients: VICODIN, like all narcotics, may impair the mental and/or physical abilities required for the performance of potentially hazardous tasks such as driving a car or operating machinery; patients should be cautioned accordingly.
Cough Reflex: Hydrocodone suppresses the cough reflex; as with all narcotics, caution should be exercised when VICODIN is used postoperatively and in patients with pulmonary disease.
Drug Interactions: Patients receiving other narcotic analgesics, antipsychotics, antianxiety agents, or other CNS depressants (including alcohol) concomitantly with VICODIN may exhibit an additive CNS depression. When combined therapy is contemplated, the dose of one or both agents should be reduced.
The use of MAO inhibitors or tricyclic antidepressants with hydrocodone preparations may increase the effect of either the antidepressant or hydrocodone. The concurrent use of anticholinergics with hydrocodone may produce paralytic ileus.
Usage in Pregnancy: Pregnancy Category C. Hydrocodone has been shown to be teratogenic in hamsters when given in doses 700 times the human dose. There are no adequate and well-controlled studies in pregnant women. VICODIN should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.
Nonteratogenic effects: Babies born to mothers who have been taking opioids regularly prior to delivery will be physically dependent. The withdrawal signs include irritability and excessive crying, tremors, hyperactive reflexes, increased respiratory rate, increased stools, sneezing, yawning, vomiting, and fever. The intensity of the syndrome does not always correlate with the duration of material opioid use or dose. There is no consensus on the best method of managing withdrawal. Chlorpromazine 0.7 to 1.0 mg/kg q6h, and paregoric 2 to 4 drops/kg q4h, have been used to treat withdrawal symptoms in infants. The duration of therapy is 4 to 28 days, with the dosage decreased as tolerated.
Labor and Delivery: As with all narcotics, administration of VICODIN to the mother shortly before delivery may result in some degree of respiratory depression in the newborn, especially if higher doses are used.
Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk and because of the potential for serious adverse reactions in nursing infants from VICODIN, a decision should be made whether to discontinue nursing or to discontinue the drug, taking into account the importance of the drug to the mother.
Pediatric Use: Safety and effectiveness in children have not been established.
ADVERSE REACTIONS:
Central Nervous System: Sedation, drowsiness, mental clouding, lethargy, impairment of mental and physical performance, anxiety, fear, dysphoria, dizziness, psychic dependence, mood changes.
Gastrointestinal System: Nausea and vomiting may occur; they are more frequent in ambulatory than in recumbent patients. The antiemetic phenothiazines are useful in suppressing these effects, however, some phenothiazine derivatives seem to be antianalgesic and to increase the amount of narcotic required to produce pain relief, while other phenothiazines reduce the amount of narcotic required to produce a given level of analgesia. Prolonged administration of VICODIN may produce constipation.
Genitourinary System: Ureteral spasm, spasm of vesical sphincters and urinary retention have been reported.
Respiratory Depression: (See WARNINGS.)
DOSAGE AND ADMINISTRATION: Dosage should be adjusted according to the severity of the pain and the response of the patient. However, tolerance to hydrocodone can develop with continued use and the incidence of untoward effects is dose related.
The usual adult dosage is one or two tablets every four to six hours as needed for pain. The total 24 hour dose should not exceed 8 tablets.

Revised June, 1987 5803

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(sucralfate) Tablets

BRIEF SUMMARY

CONTRAINDICATIONS
There are no known contraindications to the use of sucralfate.

PRECAUTIONS
Duodenal ulcer is a chronic, recurrent disease. While short-term treatment with sucralfate can result in complete healing of the ulcer, a successful course of treatment with sucralfate should not be expected to alter the post-healing frequency or severity of duodenal ulceration.

Drug Interactions: Animal studies have shown that simultaneous administration of CARAFATE (sucralfate) with tetracycline, phenytoin, digoxin, or cimetidine will result in a statistically significant reduction in the bioavailability of these agents. The bioavailability of these agents may be restored simply by separating the administration of these agents from that of CARAFATE by two hours. This interaction appears to be nonsystemic in origin, presumably resulting from these agents being bound by CARAFATE in the gastrointestinal tract. The clinical significance of these animal studies is yet to be defined. However, because of the potential of CARAFATE to alter the absorption of some drugs from the gastrointestinal tract, the separate administration of CARAFATE from that of other agents should be considered when alterations in bioavailability are felt to be critical for concomitantly administered drugs.

Carcinogenesis, Mutagenesis, Impairment of Fertility: Chronic oral toxicity studies of 24 months' duration were conducted in mice and rats at doses up to 1 gm/kg (12 times the human dose). There was no evidence of drug-related tumorigenicity. A reproduction study in rats at doses up to 38 times the human dose did not reveal any indication of fertility impairment. Mutagenicity studies were not conducted.

Pregnancy: Teratogenic effects. Pregnancy Category B. Teratogenicity studies have been performed in mice, rats, and rabbits at doses up to 50 times the human dose and have revealed no evidence of harm to the fetus due to sucralfate. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when sucralfate is administered to a nursing woman.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS
Adverse reactions to sucralfate in clinical trials were minor and only rarely led to discontinuation of the drug. In studies involving over 2,500 patients treated with sucralfate, adverse effects were reported in 121 (4.7%).

Constipation was the most frequent complaint (2.2%). Other adverse effects, reported in no more than one of every 350 patients, were diarrhea, nausea, gastric discomfort, indigestion, dry mouth, rash, pruritus, back pain, dizziness, sleepiness, and vertigo.

OVERDOSAGE
There is no experience in humans with overdosage. Acute oral toxicity studies in animals, however, using doses up to 12 gm/kg body weight, could not find a lethal dose. Risks associated with overdosage should, therefore, be minimal.

DOSAGE AND ADMINISTRATION
The recommended adult oral dosage for duodenal ulcer is 1 gm four times a day on an empty stomach.

Antacids may be prescribed as needed for relief of pain but should not be taken within one-half hour before or after sucralfate.

While healing with sucralfate may occur during the first week or two, treatment should be continued for 4 to 8 weeks unless healing has been demonstrated by x-ray or endoscopic examination.

HOW SUPPLIED
CARAFATE (sucralfate) 1-gm tablets are supplied in bottles of 100 (NDC 0088-1712-47) and in Unit Dose Identification Paks of 100 (NDC 0088-1712-49). Light pink scored oblong tablets are embossed with CARAFATE on one side and 1712 bracketed by C's on the other. Issued 1/87

Reference:
1. Eliakim R, Ophir M, Rachmilewitz D: *J Clin Gastroenterol* 1987;9(4):395-399.

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Please see brief summary of prescribing information, and reference on adjacent page.

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Indication: Lower respiratory infections, including pneumonia, caused by *Streptococcus pneumoniae, Haemophilus influenzae*, and *Streptococcus pyogenes* (group A β-hemolytic streptococci).
Contraindication: Known allergy to cephalosporins
Warnings: CECLOR SHOULD BE ADMINISTERED CAUTIOUSLY TO PENICILLIN-SENSITIVE PATIENTS. PENICILLINS AND CEPHALOSPORINS SHOW PARTIAL CROSS-ALLERGENICITY. POSSIBLE REACTIONS INCLUDE ANAPHYLAXIS.
Administer cautiously to allergic patients.
Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics. It must be considered in differential diagnosis of antibiotic-associated diarrhea. Colon flora is altered by broad-spectrum antibiotic treatment, possibly resulting in antibiotic-associated colitis.
Precautions:
- Discontinue Ceclor in the event of allergic reactions to it.
- Prolonged use may result in overgrowth of nonsusceptible organisms.
- Positive direct Coombs' tests have been reported during treatment with cephalosporins.
- Ceclor should be administered with caution in the presence of markedly impaired renal function. Although dosage adjustments in moderate to severe renal impairment are usually not required, careful clinical observation and laboratory studies should be made.
- Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.
- Safety and effectiveness have not been determined in pregnancy, lactation, and infants less than one month old. Ceclor penetrates mother's milk. Exercise caution in prescribing for these patients.

Adverse Reactions: (percentage of patients)
Therapy-related adverse reactions are uncommon. Those reported include:
- Gastrointestinal (mostly diarrhea) 2.5%.
- Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment.
- Hypersensitivity reactions (including morbilliform eruptions, pruritus, urticaria, and serum-sickness-like reactions that have included erythema multiforme [rarely, Stevens-Johnson syndrome] and toxic epidermal necrolysis or the above skin manifestations accompanied by arthritis/arthralgia, and frequently, fever). 1.5%, usually subside within a few days after cessation of therapy. Serum-sickness-like reactions have been reported more frequently in children than in adults and have usually occurred during or following a second course of therapy with Ceclor. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.
- Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.
- As with some penicillins and some other cephalosporins, transient hepatitis and cholestatic jaundice have been reported rarely.
- Rarely, reversible hyperactivity, nervousness, insomnia, confusion, hypertonia, dizziness, and somnolence have been reported.
- Other: eosinophilia, 2%, genital pruritus or vaginitis, less than 1%, and, rarely, thrombocytopenia.

Abnormalities in laboratory results of uncertain etiology
- Slight elevations in hepatic enzymes.
- Transient fluctuations in leukocyte count (especially in infants and children).
- Abnormal urinalysis, elevations in BUN or serum creatinine.
- Positive direct Coombs' test.
- False-positive tests for urinary glucose with Benedict's or Fehling's solution and Clinitest® tablets but not with Tes-Tape® (glucose enzymatic test strip, Lilly).

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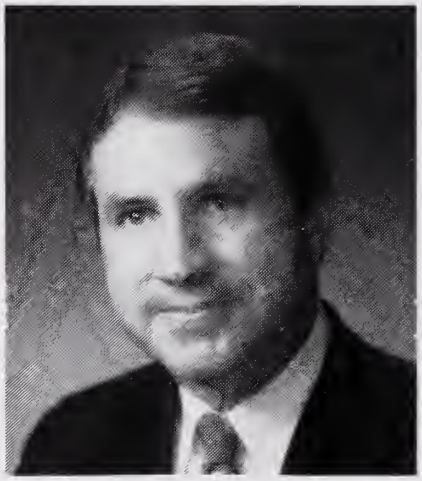

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It is called "spending time with the patient." It has fallen to neglect in the past thirty years or so, ever since the third parties decided it was too variable, of questionable value, and probably obsolete. They couldn't put it on a shelf with the other medical merchandise they were buying, so they decided not to pay for something as intangible as "spending time with the patient."

Understandably, there *is* a bit more to it than simply spending time with the patient. It is important to obtain a detailed medical history; to ask questions and listen to answers. It is important to do a physical examination and it is important to maintain a medical record. It is important to be able to communicate with patients and families and encourage their participation in the process of making decisions.

All of this requires talent and time, and the more time spent with patients the more perfect the talent becomes. There *is* no more effective continuing medical education.

If and when physicians are justly reimbursed for the time they spend with patients, the overall cost of medical care will stabilize, unnecessary and unwanted procedures and treatments will decline, the competency of the practitioner will increase, and the quality of care will rise.

If and when physicians spend more time with their patients, they will once again become friends.

We will all discover there is a way — for our profession to rise not from the ashes but from the rubble and dust of neglect.

—MRJ

Knowledgeable Oklahomans have urged tort reform for many years, and prodigious effort has been expended in multiple legislative confrontations that have accomplished some things — but not enough. Liability claims and awards continue to mount, and the legislature remains the fief of attorneys.

Many non-meritorious suits continue to be filed and cause pain to Oklahoma physicians and cost millions of dollars for defense. Only one suit in ten reveals poor medical care when reviewed by peer physicians, but an economic incentive to file suit persists, and the disgruntled patient all too often expresses anger and frustration by filing a suit.

Medicine has active programs to find and re-educate the inept physician. Continuing medical education is widely available and is so widely used that a lack of medical skill is very rarely involved in medical liability suits. Physician sensitivity in detecting the covertly angry patient is continually improving. However, suits will persist as long as there are patients and doctors. In this climate, concerned citizens must press on with tort reform. Presently, we must try to remove those inequities in Oklahoma law that tip the balance in liability cases for the plaintiff.

Several revisions of Oklahoma statutes could lead to improved equity and fairness in medical liability cases in Oklahoma.

- **Require an affidavit of malpractice at suit filing.** Present law permits the plaintiff attorney to file suit first and seek medical confirmation of malpractice later. Attorneys sometimes misinterpret the patient's source of injury and file suits with scant justification. The physician must defend himself even though the suit is later dropped.
- **Pay punitive damages to the state general fund.** Punitive damages exist in law, like fines, as punishment for outrageous behavior, but they are often sought in malpractice cases in order to threaten the defendant physician with a non-insurable loss. Since the money from fines is paid to the state, punitive damages likewise should be paid to the state instead of to the litigants.
- **Establish periodic payments for large awards.** Large awards are often frittered away, leaving chronically damaged patients to go on welfare at taxpayers' expense. Periodic payment annuities would prevent frivoling and reduce insurance costs and reserve account requirements.
- **Revise the joint and several liability doctrine.** Present usage of this doctrine penalizes the physician at risk as the "deep pocket." Justice calls for the damages paid to be proportional to the degree of negligence when conjoint liability exists.
- **Put a cap on non-economic damages (pain and suffering).** Economic damages may be calculated with reasonable accuracy, but the dollar awards for "pain and suffering" cannot. Being non-compensible with money, they should be capped, as they often lead to large "sympathy" awards. These erratic and sometimes astronomical awards must be statistically included in next year's insurance premiums. Capping the pain awards would reduce reserve account and premium requirements.
- **Create a statute of limitations for "pain and suffering" awards.** Fair trials are impossible more than a few years after injury as witness memory fades and technological change blurs the depiction of negligence. Pain awards should be barred more than three years post-injury.

If all these tort reforms were enacted in Oklahoma, there would be some improvement in the medical liability problem. The rate of claims filing would level off. The size of awards would probably not be materially affected, but the improved ability to predict the amount of needed insurance reserves would lead to a stability of premiums.

These tort reforms will be vigorously resisted by many attorneys who believe their cash flow would be lessened. Any tort reform passed this year may well be subject to repeal attempts next year. Judicial interpretation of the reforms may reduce the positive effect, as the judges are also attorneys.

However, the passage of these reforms will benefit the people of Oklahoma. Health care advances are now being held back by liability fears. The medical community of Oklahoma should firmly insist on the passage of these reforms.

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IgG Subclass Deficiency in Children with Recurrent Respiratory Infections

A. Izzet Berkel, MD; S. Lamar Barnett, MS; Gerald Miller, PhD; David Jubelirer, MD; James W. Bullard, BS

IgG subclass deficiency frequently occurs in children with recurrent otitis media and respiratory infections. IgG subclasses should be included in the diagnostic evaluation of all such children.

Selective deficiencies of one of more of the immunoglobulin G (IgG) subclasses may increase susceptibility to recurrent pyogenic infections[1] and have been reported with increasing frequency in children with recurrent respiratory infections.[2-5] IgG subclass deficiency has been well described in patients with primary immunodeficiency diseases.[6-9] Deficiency of a subclass may also occur with normal levels of total serum IgG.[10]

We report a retrospective study of sera from 64 children who were referred for evaluation of recurrent respiratory infections and who had normal levels of total IgG or with IgA deficiency.

Our results reveal the frequent occurrence of IgG subclass deficiency in children with recurrent respiratory infections and suggest that IgG subclasses be included in the diagnostic evaluation and designation of all such cases.

Materials and Methods

Sixty-four children ages 10 months to 8 years were referred for testing of serum immunoglobulin levels because of multiple episodes of otitis media, bronchitis, bronchopneumonia, or sinusitis between October 1984 and March 1987. None had a family history of primary immunodeficiency disease, but one-third of the group reported a family history of allergy.

They were divided into two groups: Group I — Forty-three patients (mean age 3 years, range 10 months to 8 years) with normal serum immunoglobulin levels for age[11]; Group II — Twenty-one patients (mean age 3.6 years, range 10 months to 8 years) with IgA deficiency, either complete (less than 5 mg/dl in 8 patients) or partial (below −2 SD for age in 13 patients). None of the children had serum total IgG levels below −2 SD for age.

IgG subclasses were quantitated by radial immunodiffusion (ICN Immuno Biologicals, Lisle, Ill.). World Health Organization reference serum 67/95, which contained an IgG1 of 7.1 mg/ml, IgG3 of 0.7 mg/ml and IgG4 of 0.56 mg/ml, was used as control. Repeat serum analysis was carried out to confirm low levels. Our results were compared to the normal values reported by Schur and coworkers.[12] Linear regression was used to estimate the relationship between IgG subclasses and age for normal children. The age was assigned as the midpoint of any age category as described by Schur et al.[12] Because of the skew of the IgG subclass measurements, the analysis used the logarithm (base 10) of a subclass measurement. The 68% and 95% large sample prediction intervals were determined by standard procedures.[13] Regression lines were determined by the method of least squares.[13] *Low IgG*

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subclass values were designated as those below the 95% prediction interval, and *low normal values* as those between the lower 68% and 95% prediction intervals.

Results

In each study group, 10 children had single or combined IgG subclass deficiency. The types of deficiencies were, in Group I, IgG2 in 3, IgG2-IgG4 in 1, and IgG4 in 6; and in Group II, IgG2 in 1, IgG2-IgG4 in 2, IgG3 in 2, and IgG4 in 5 (Figure). In both groups, recurrent otitis media was prominent in patients with IgG2 or IgG2-IgG4 deficiency. Serum IgG values were at low normal levels (between −1 SD and −2 SD of the mean) in 5 children from each study group with IgG subclass deficiency. In Group II, IgG subclass deficiency was observed in 7 patients with partial IgA deficiency and 3 patients with complete IgA deficiency.

Discussion

Deficiencies of IgG subclasses are associated with recurrent respiratory infections.[2,4,10] Recently Smith et al[2] described subclass deficiencies in 33 of 37 nonallergic children with chronic chest symptoms, and Shackelford and coworkers[4] reported IgG2 deficiency in 7 of 30 children with recurrent respiratory infections. In our study, 20 of 64 children with recurrent respiratory infections had IgG subclass deficiency.

There is also an increased frequency of subclass deficiencies in allergic individuals.[3,5] Noyes et al[5] reported IgG subclass deficiency in 31 of 75 allergic children with recurrent respiratory infections and

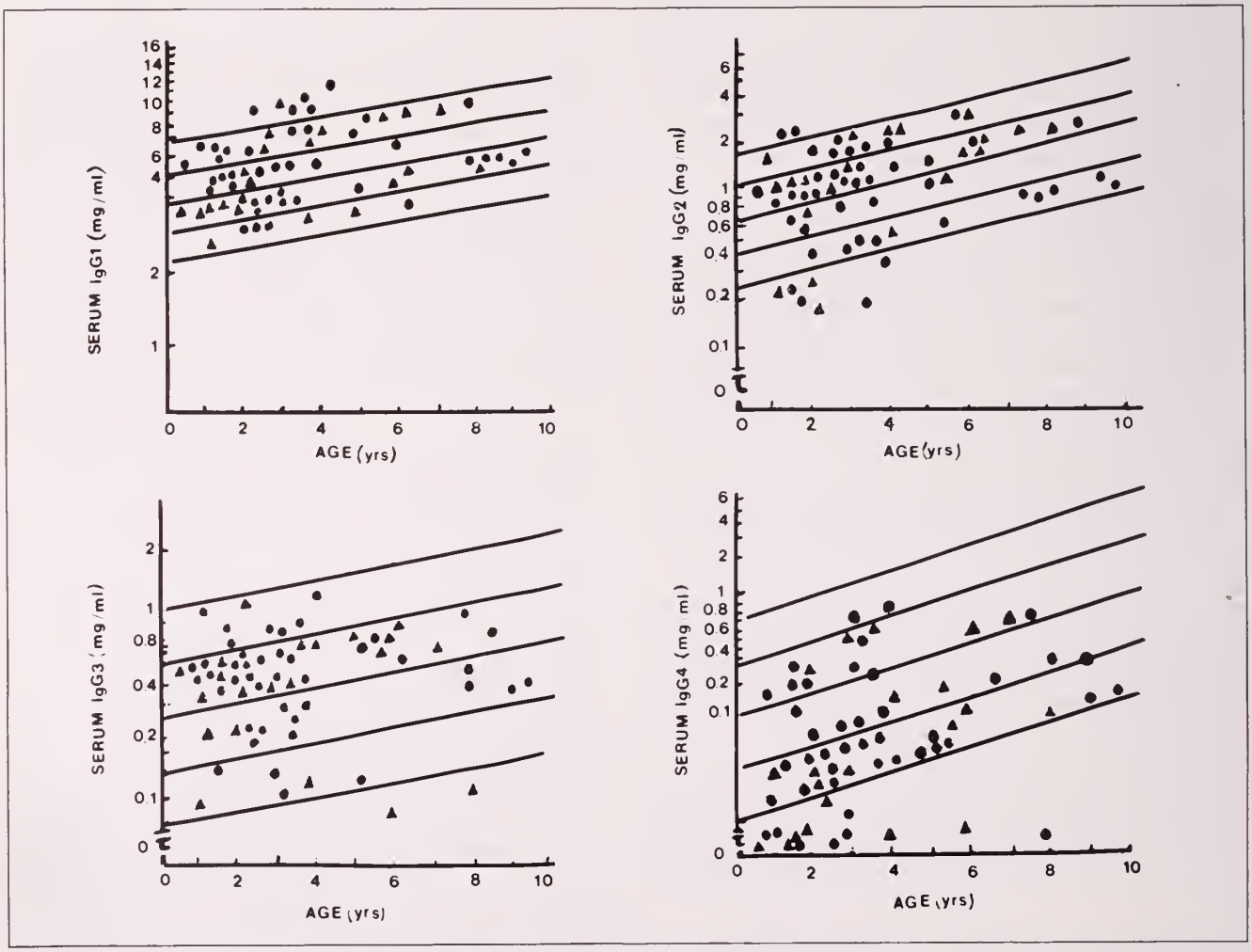

Figure. Serum concentrations of each IgG subclass in 64 patients (● patients with normal levels of serum immunoglobulins; ▲ patients with IgA deficiency). Estimated regression lines between IgG subclasses and age, and 68% and 95% prediction intervals are indicated.

normal total IgG levels. The frequency of subclass deficiency in symptomatic children with IgA deficiency varies between 15% and 40%[14-19] (Table), but is usually not present in asymptomatic IgA-deficient individuals.[9,15]

Our results support the finding that IgG subclass deficiency is more frequent in patients with partial IgA deficiency than in those with complete IgA deficiency,[15] particularly if the serum IgG was in the low normal range.[19,20] Partial IgA deficiency was seen in 7 of 10 children with IgG subclass deficiency, and in 4 children the total serum IgG was low normal (between −1 SD and −2 SD).

IgG subclasses are important in the humoral defense system, because IgG antibody responses to polysaccharide antigens reside predominantly within the IgG2 subclass,[10] whereas the IgG antibody responses to protein antigens (eg, tetanus and diphtheria toxoids) reside predominantly within the IgG1, IgG3 subclasses. Children with low IgG2 levels are more prone to recurrent otitis media due to Haemophilus influenzae,[10] which has also been observed in this study. IgG2, IgG4 levels may not reach maximum levels until adolescence.[12] For this reason, the frequency of IgG subclass deficiency is higher in younger children. Therefore, in some children IgG subclass deficiency may be secondary to delayed maturation of that subclass. Further follow-up by repeat determinations of IgG subclass levels can help to reveal the relationship between recurrent infections and IgG subclass deficiency. Also, assessment of antibody response to polysaccharide antigens following immunization with Hib and Pneumovax® is of practical help. Those with severe infections and poor antibody responses may be candidates for gammaglobulin therapy.[21]

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(continued)

Table. IgG Subclass Deficiency in Children with Selective IgA Deficiency

Author	Total	IgG Subclass Deficiency	Deficiency IgG1	IgG2	IgG3	IgG4	Type and Number of Combined Subclass Deficiency
Oxelius et al,[9] 1981	37*	7 (18)†	0 (0)	7 (18)	0 (0)	6 (16)	IgG2-IgG4: 6
Ugazio et al,[14] 1983	36	13 (36)	3 (8)	9 (25)	1 (2)	8 (22)	IgG2-IgG4: 4
Plebani et al,[15] 1986	66	10 (15)	0 (0)	5 (7)	4 (6)	3 (4)	IgG2-IgG4: 2
Cunningham-Rundles, et al,[16] 1983	39*	6 (15)	0 (0)	4 (10)	3 (7)	17 (43)	IgG2-IgG3: 1
Cunningham-Rundles,[17] 1985	69*	13 (18)	0 (0)	6 (8)	7 (10)	**	IgG2-IgG3: 3
Chandra,[18] 1986	21	7 (33)	0 (0)	5 (23)	0 (0)	4 (19)	IgG2-IgG4: 2
Beard et al,[19] 1986	22	9 (40)	6 (27)	4 (18)	1 (4)	9 (40)	IgG1-IgG2: 1, IgG1-IgG4: 2 IgG2-IgG4: 1, IgG2-IgG3: 1
Out et al,[20] 1986	25*	10 (40)	2 (8)	4 (16)	0 (0)	6 (24)	IgG1-IgG4: 1, IgG2-IgG4: 1 IgG3-IgG4: 1 IgG1-IgG2-IgG4: 1
Present study	21	10 (47)	0 (0)	3 (14)	2 (9)	7 (33)	IgG2-IgG4: 2

*Included both children and adults **Not mentioned †Parenthesis indicates percentage

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Spina Bifida Occulta: Early Clinical and Radiographic Diagnosis

Don Horton, MD; Patrick Barnes, MD; Bruce D. Pendleton, MD; Michael Pollay, MD

Tethered cord syndrome (TCS) is produced by traction of the lumbosacral spinal cord. Clinically, patients with tethered cord syndrome present with various combinations of neurologic, orthopedic, and cutaneous abnormalities. These abnormalities are often subtle. Early diagnosis, and treatment when indicated, is essential to prevent progressive and frequently irreversible neurological deterioration. Early diagnosis is aided by a high degree of clinical suspicion. Plain spine films are useful in the preliminary evaluation of suspected dysraphism. When plain film abnormalities are present, magnetic resonance imaging (MRI) has been found to be the single most effective procedure for both initial diagnosis and pre-operative evaluation of patients with myelodysplasia.

Tethered cord syndrome (TCS) is the clinical entity produced by traction of the spinal cord. Multiple pathological conditions can cause tethered cord syndrome, including thickened filum terminale, lipomeningocele, fibrous adhesions, diastematomyelia, dermal sinus tracts, and previous closure of a myelomeningocele.

In early embryonic stages, the spinal cord fills the total length of the spinal canal. With development, the spinal canal grows faster than the spinal cord. This differential growth allows the spinal cord to "ascend" in the spinal canal. At birth the conus medullaris is normally at the L3 level and ascends to the adult location at the L1-L2 level after the second postnatal year.[1] Proper ascent of the spinal cord therefore requires a well-formed neural tube and smooth piaarachnoid covering. Any of the above-mentioned dysraphic conditions can inhibit the ascent of the caudal spinal cord, resulting in traction, decreased bloodflow, ischemia, and neurological deterioration.

Numerous reports of late deterioration in untreated cases of TCS have essentially silenced further dispute about the need for early diagnosis.[2] Many authorities advocate prompt surgical intervention.[2-7] Patients with these often subtle signs and symptoms usually present to family medicine, pediatric, and orthopedic physicians for initial evaluation. Early detection is crucial in this patient population.

Methods

From July 1976 to June 1986, 132 patients underwent radiographic evaluation for presumed spinal dysraphism. These patients were selected after clinical examination established the suspicion of underlying myelodysplasia. Symptoms and signs included gait abnormalities, weakness, muscle atrophy, bowel and/or bladder dysfunction, scoliosis, foot deformities, and pain or paresthesia of the lower extremities. Dorsal cutaneous stigmata included hypertrichosis, subcutaneous lipoma, hemangioma, telangiectasia, hyperpigmentation, a skin dimple, or combinations of the above (Fig 1). All 132 patients were subsequently evaluated with spinal radio-

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Figure 1A. Dorsal midline hypertrichosis and hyperpigmentation.

Figure 1B. Dorsal midline skin tag.

Figure 1C. Unequal foot development in a child with myelodysplasia.

graphs for findings of dysraphism, including spinal canal widening, vertebral anomalies, neural arch defects, or other signs of dysraphism. These patients also underwent spinal cord imaging with water-soluble contrast myelography, computer tomography, or magnetic resonance (Fig 2).

Results

Clinical. Forty-nine of the 132 patients (37%) were found to have radiographic evidence of myelodysplasia. The mean age of presentation was 4.4 years, ranging from shortly after birth to 23 years of age. Refer to Table 1 for demographic information. The most common presenting complaint was a dorsal cutaneous abnormality (33%) (Table 2), and a cutaneous abnormality was found in 35 (71%) (Table 3).

Plain Film Findings. Of the 132 patients, 116 had plain film abnormalities. All 49 of the patients with spinal imaging studies consistent with myelodysplasia had abnormal plain films. Sixty-eight (82%) of the patients with normal spinal imaging studies also were found to have plain film abnormalities.

Spinal Cord Imaging. Forty-nine (37%) of the patients involved in this study were found to have spinal cord imaging studies consistent with myelodysplasia. The most common type of myelodysplasia in this series is low conus with thickened filum terminale (Table 4).

Surgical Findings. Forty-four of the 49 patients underwent surgical treatment. Three patients did not have surgically correctable lesions, and two refused treatment. Myelodysplasia was confirmed in each operatively treated case.

Post-Operative Clinical Findings. Forty patients had no postoperative deterioration of neurological function, and approximately 50% had at least minimal subjective or objective improvement. Four patients were found to have increased postoperative neurological deficit. This was transient in three, each regaining pre-operative function. One child, a 3-year-old with previously treated myelomeningocele and low conus, was walking prior to surgery. One month following surgery the child had no demonstrable strength loss but was not walking without assistance. Further follow-up evaluation is needed to establish the outcome of this case.

Special Groups. Within this retrospective study, two related subgroups were identified. In the first subgroup, all patients originally presented with imperforate anus. Tunell recently presented similar findings.[8] Thirteen such patients were evaluated in

Figure 2A. Plain spine film with sequelae of spinal dysraphism. Note the absence of spinous processes and neural arches (arrows).

Figure 2B and C. Water soluble myelogram showing the conus at the fifth lumbar level (arrow).

this study. The mean age of evaluation was 3.3 years. Seven (54%) were found to have radiographic evidence of myelodysplasia, including four patients with low conus and thickened filum, two patients with low conus and lipoma, and one patient with dural ectasia. Six of these patients underwent surgical treatment. No child in this group subsequently developed neurological deterioration, and three patients remained without detectable deficit.

The second subgroup consisted of those patients who previously had undergone surgical closure of non-skin-covered neural tube defects. Nine such patients were evaluated. The mean age at presentation was 11.3 years, with a range of 2.5 to 23 years. Three patients presented with increasing scoliosis, two had foot ulcers, one had increasing enuresis, one had low back pain, and one presented with impotence. All of these patients were found to have radiographic evidence of myelodysplasia. Eight were found to have low conus, and three of those eight had associated lipoma. One patient was felt to have a collapsed hydromyelia. Six of these patients subsequently underwent surgical treatment, two refused treatment, and one was felt not to have a surgically treatable lesion. As noted above, one of these patients, a 3-year-old, was not walking at one month postoperative follow-up evaluation. Another child required spinal stabilization for progressive scoliosis.

In this study, approximately 50% of the 44 surgi-

Figure 2D. Computerized tomography revealing a thickened filum terminale (arrow).

Figure 2E. Normal midline sagittal magnetic resonance image with conus at the L1-L2 level (arrow). **Figure 2F.** Midline sagittal magnetic resonance image reveals a low conus terminating in a lipoma (arrow).

cally treated patients had at least mild subjective or objective improvement in follow-up examination. Three patients had transient deterioration, and one patient had an increased deficit at one month follow-up evaluation. These results correlate well with previously reported results.[6] Several of these patients required corrective orthopedic foot procedures following spinal cord release. In each case the foot abnormality was present prior to neurosurgical intervention. While marked improvement is not to be expected, certainly the majority of patients treated surgically suffer no progression of neurological function.

Recommendations

Prompt treatment may prevent progressive neurological deficit, and early diagnosis is extremely important. In one study, Bruce found that 88% of children with TCS secondary to spinal lipoma developed neurological deficit if left untreated.[3] In another study, Linder found that 53% of his patients with TCS remained stable postoperatively, 47% showed some improvement, and only 4% had less neurologic function following operative management.[6] Both of these authors, along with numerous others, recommend early diagnosis and treatment to prevent progressive, often irreversible, neurologic deficit.[2,3,5-7]

Primary care physicians are usually the first to evaluate children with occult dysraphism, and recognition of often subtle warning signs is crucial. These findings include neuropathic foot anomaly, dorsal cutaneous stigmata, weakness or paresthesia of the lower extremities, and bowel or bladder dysfunction. In this series, cutaneous stigmata was most closely indicative of underlying myelodysplasia. The triad of dorsal cutaneous abnormality, foot anomaly, and abnormal plain film findings is in 89% of cases indicative of underlying myelodysplasia (Table 5). Delayed development of bowel and bladder continence should increase the clinician's suspicion and initiate closer investigation.

Children with imperforate anus complexes and patients with progressive neurological deficit following open neural tube defect repair should also undergo evaluation. Of the spinal cord imaging techniques, magnetic resonance imaging (MRI) seems to be the single most effective procedure for both initial diagnosis and preoperative evaluation, and is presently the imaging procedure of choice in patients whose clinical and spine x-ray findings indicate dysraphism. Spinal ultrasound

Table 1. Demographic Information of 132 Patients Who Underwent Neuroradiographic Evaluation

	Normal Spinal Imaging	Spinal Imaging Consistent with Myelodysplasia	Total
Total	83	49	132
Male	49 (59%)	23 (47%)	72 (55%)
Female	34 (41%)	26 (53%)	60 (45%)
Caucasian	65 (78%)	39 (80%)	104 (79%)
Black	10 (12%)	3 (6%)	13 (10%)
American Indian	4 (5%)	3 (6%)	7 (5%)
Hispanic	3 (4%)	4 (8%)	7 (5%)
Asian	1 (1%)	0 (0%)	1 (1%)

Table 2. Presenting Complaints of Patients in This Study

	Normal Spinal Imaging	Spinal Imaging Consistent with Myelodysplasia	Total
Scoliosis	24 (29%)	3 (6%)	27 (20%)
Enuresis	13 (16%)	5 (10%)	18 (14%)
Gait disturbance	12 (14%)	2 (4%)	13 (10%)
Imperforate anus	6 (7%)	7 (14%)	13 (10%)
Foot abnormality	5 (6%)	8 (16%)	13 (10%)
Dorsal stigmata	4 (5%)	16 (33%)	20 (15%)
Pain	4 (5%)	3 (6%)	7 (5%)
Rectal dysfunction	2 (2%)	1 (2%)	3 (2%)
Others	13 (16%)	4 (8%)	17 (13%)

Table 3. Clinical Findings on Evaluation of the Patients in This Study

	Normal Spinal Imaging	Spinal Imaging Consistent with Myelodysplasia	Total
Cutaneous stigmata	14 (17%)	35 (71%)	49 (37%)
Rectal dysfunction	30 (36%)	30 (61%)	60 (45%)
Urinary dysfunction	42 (51%)	21 (43%)	63 (48%)
Foot anomaly	11 (13%)	13 (27%)	24 (18%)

Table 4. Types of Myelodysplasia	
Low conus with thickened filum	10
Previous myelomeningocele repair	9
Lipomeningocele	7
Meningomyelocele	4
Dural ectasia	3
Diplomyelia with low conus	3
Diastematomyelia	3
Lipomeningocele with thickened filum	3
Sacral lipoma with low conus	2
Cervicothoracic diplomyelia	1
Syringomyelia	1
Meningocele (thoracic)	1
Hydromyelia	1
Sacral intraspinal meningocele	1
Endodermal sinus tumor	1
Presacral meningocele	1

Table 5. Predictive Analysis of Myelodysplasia

Clinical Finding	Total Number of Patients	Number with Myelodysplasia
Previous myelomeningocele repair	9	9 (100%)
Dorsal stigmata	49	35 (71%)
Imperforate anus	13	7 (54%)
Foot abnormality	24	13 (54%)
Rectal dysfunction	60	30 (50%)
Pain	7	3 (43%)
Bladder dysfunction	63	27 (42%)
Abnormal plain spine film	116	49 (42%)
Scoliosis	27	3 (11%)
Abnormal plain spine film, with foot anomaly and dorsal stigmata	9	8 (89%)

study may be helpful for screening in newborn and young infants, while myelography and computer tomography are infrequently needed adjuncts to MRI.[9]

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Coming in February

Manuscripts being considered for publication in February include an examination of stress and the workplace, a report on increased lead absorption and the lead poisoning from a retained bullet, and the reflections of one professor on teaching clinical medicine.

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Adverse Reactions of Medical Organizations to DTP Vaccine: The Vaccine-Related Compensation Bill

Samuel Sepkowitz, MD

As is the case with all articles published in the Commentary category, this article represents the opinion of the author, and its publication does not necessarily represent endorsement by the Oklahoma State Medical Association. Opposing and supporting views as expressed in written responses are welcome and may be published in our Reaction Time department. —*Ed.*

Fifty-five national medical organizations have successfully encouraged the passage of a vaccine-related compensation bill. As a result the federal government will establish unprecedented requirements for the medical profession to maintain and to issue information about diphtheria-tetanus-pertussis (DTP) vaccine and its possible adverse effects. The law will legitimize anecdotal and questionable information about the adverse effects. Absolute contraindications to DTP vaccine administration will be decreed by government regulations.

Data from prospective studies of large populations, which found no evidence of permanent neurological sequelae, have been omitted from the adverse reaction protocols of the American Academy of Pediatrics and the Centers for Disease Control (CDS). Presumably these protocols will form the basis of the new government regulations.

Under the law, the federal government will be responsible for developing a less reactogenic DTP vaccine. Government officials may also determine if a new vaccine is better than what is presently available, and decide which vaccine will be employed.

The vaccine-related compensation bill (S.1744), which was vigorously supported by the American Academy of Pediatrics, the American Medical Association, and 53 other groups, was the response of these organizations and the federal government to the vaccine-litigation controversy.[1,2] Inserted into the bill, but not as well publicized, are regulations that will enforce an ominous intrusion by the federal government into the relationship between physician and patient. The fact is these organizations have sanctioned the displacement of a physician's personalized authority with the impersonal authoritarianism of the federal government.

If implementation of the law follows the guidelines of the Committee on Infectious Diseases of the American Academy of Pediatrics,[3] physicians will be required to maintain very detailed records concerning the manufacture of the vaccine, the lot number, expiration date, and site and route of administration. All such information will also have to be placed on a patient-retained record. This committee has also recommended that physicians advise families about the benefits and hazards of immunizations, "making sure that the information is understood." Consent for the immunization should be obtained, which may or may not be signed, and placed into the patient's chart.

The information and recommendations concerning adverse reactions to diphtheria-tetanus-pertussis (DTP) immunization issued by the Infectious Disease Committee of the American Academy of

Direct correspondence to Samuel Sepkowitz, MD, 5300 N Meridian, Oklahoma City, OK 73112.

The attributable risk for neurological sequelae one year after a DTP injection is one per 310,000 injections . . .

Pediatrics[3] are similar to those provided by the Centers for Disease Control.[4] Unfortunately, the compilation of reaction data by these organizations has been derived from a mixture of anecdotal information, frequency data,[5] relative-risk information based on a case-controlled study,[6] and attributable risks based on an area study.[6] And most unfortunately of all, these organizations have not mentioned the most reassuring evidence available from the same cited area study — that there was no basis to support the concept of a "pertussis reaction syndrome" as a neurological disorder resulting from a DTP injection.[6]

The failure to find a specific neurological disorder attributable to DTP vaccine was reported from a study of hospital admissions of patients, two months to 36 months of age, with neurological disorders, during a three-year period (1976-1979) in England, Scotland, and Wales.[6] Another prospective area-defined study of seven years duration, involving more than 400,000 injections of DTP vaccine, reached the same conclusion: Pollack and Morris[7] found nothing to support the claim that DTP injections produced a syndrome, in a previously healthy child, of continuous screaming, collapse, and convulsions, soon followed by arrest of mental development and by varying degrees of physical handicap. They found no clinically distinguishable neurological syndrome related to DTP administration.

The Committee on Infectious Disease of the American Academy of Pediatrics and the CDC, quoting from the three-year British study, have listed the attributable risk of permanent neurological sequelae following a DTP injection to be one in 310,000 injections.[6] But is it? A more exact statement would be that, based on hospital admissions, the attributable risk for neurological sequelae one year after a DTP injection is one per 310,000 injections "without excluding any with a possible alternative explanation." What the attributable risk for a neurological disorder would be among hospitalized patients without an etiologic diagnosis and without a preceding DTP injection is not available for comparison.

Instead, a case-control study to establish relative risks from DTP injections has been coupled with the area study that addressed attributable risks, with an implication that DTP vaccine was responsible for a permanent neurological derangement among some recipients.[6] This is the position of the academy[3] and the CDC,[4] each of which relied exclusively on the report by Miller et al,[6] the British study, for the relative risk and attributable risk data. These authors concluded that a patient who received a DTP injection was more likely to be hospitalized within seven days with a neurological illness than one who did not receive an injection (relative risk 3.3-$P < 0.001$).

This case-control study has exaggerated the risks from a DTP injection.[6] The authors have included febrile convulsions as a serious neurological disorder in their investigation when it is well known that DTP vaccine is reactogenic, producing a febrile response in many patients and consequently febrile seizures in some susceptible individuals. Of the 1,000 clinical diagnoses studied, 316 (32%) were febrile seizures. Two hundred sixty-four of the 477 patients (56%), who were normal before hospitalization and at the end of the study, had febrile seizures. Furthermore, the median age was 13.3 months on admission for this group of patients, as compared to 7.5 months and 6.4 months for the groups neurologically impaired at the end of the study. Febrile seizures from any cause are more common in the older age group.

The case-control design of this singular investigation has also exaggerated the risks from DTP vaccine and biased the results. This study took place during a time when families and physicians, reacting to the reports about the dangers of the vaccine and the questions arising about the need for a pertussis vaccine, allowed the vaccine-acceptance level to fall in Britain from 80% in 1974 to 31% in 1978, a remarkable demonstration of the power of the news media to frighten the public and to influence medical care.

There is no evidence that minor or unusual reactions are followed by any adverse neurological sequelae.

It can be assumed that these pervasive fears would not stop with the lowering of the immunization level against pertussis. Certainly, these fears would increase the likelihood that families and physicians would hospitalize any patient who had any associated untoward event with a DTP injection, a pressure not placed on the controls in this case-controlled study. Although there is no evidence in the report by Miller et al[6] indicating such a bias, the area study by Pollack and Morris,[7] from 1975 to 1982, noted a selection bias in their reports of adverse reactions which resulted from publicity. In the US, according to the compilations of the CDC, reported adverse events from immunizations, particularly febrile convulsions, increased during the period 1979 to 1982 and had their greatest increase in 1982, "a year in which national attention was focused on events associated with vaccines."[8]

The American Academy of Pediatrics has continued to circularize a DTP Vaccine Information Sheet[9] to its members for distribution to families. The sheet has been strongly objected to by the New York Pediatric Society.[10] The information sheet warn that there may be problems after a DTP injection, that some reactions may be suspected as serious, and that serious reactions can be treated if necessary. The check list of reactions is divided into usual reactions — fever, irritability, local soreness, and swelling — and less common reactions.

Among the less common reactions which should be reported to the physician are high-pitched crying for more than three hours, excessive sleepiness or difficulty in rousing the infant, limpness or paleness, temperature of 103 degrees or higher, and convulsions. With as many as 20 million DTP injections being given annually in this country,[11] it is dismaying to ponder what will happen if the academy's Vaccine Information Sheet is adopted by the federal authorities and is required to be given to families with each injection. How many DTP vigils will be held by frightened young families of infants two months of age and older, many becoming ill for the first time? With vaccine information sheet in hand, families will be left to sort out, measure, time, record, and to make sense out of the vagaries of the information sheet. When should the physician be called for the promised assistance and treatment? When does crying become high-pitched crying? When does sleepiness become excessive sleepiness? How limp is limp and how pale is pale? Only a Woody Allen could do justice to the fears and anxieties and to the absurdity of what medical organizations have prepared and what the federal authorities are preparing for families.

Absolute contraindications to the injection of the DTP vaccine, which are similar to less common reactions listed on the DTP Vaccine Information Sheet, have been formulated by the American Academy of Pediatrics and the CDC. In doing so, these organizations have perpetuated the dual assumptions that there are permanent neurological disorders resulting from DTP injections and that these disorders can be prevented. Now the federal government has been given the authority to legitimize these assumptions. The absolute contraindications have been derived from the same farrago of anecdotal information, attributable risks, relative risks, and frequency data previously discussed, plus the patient management protocol for convulsions and DTP vaccine administration that has been taken from a retrospective CDC investigation,[12] criticized by others for its extremely biased patient selection.[13,14]

The American Academy of Pediatrics, the CDC, and federal law notwithstanding, there is no evidence that minor or usual reactions are followed by any adverse neurological sequelae.[14,15] Furthermore, there is no convincing evidence that the DTP injection might result in any permanent neurological disorder or that there are any absolute contraindications to the administration of the vaccine. Compassion for the patient and family to not risk a reaction with someone who is ill or whose health status is uncertain is the valid reason to defer immunizations,

(continued)

The federal law has mandated that a new, less reactogenic DTP vaccine be developed.

not a list of contraindications issued by the federal government.

Others have not been convinced as well. In 1974 Prensky[16] stated, "This 25-year-old controversy, punctuated by limited clinical studies and testimonials will remain a monument to the ineffectual nature of anecdotal reports and retrospective studies." In 1987 Cherry,[17,18] whose contributions and whose group's investigations of adverse DTP reactions has been the sole authority cited by these national organizations for many of their rules and regulations about DTP administration, has stated, "There are not data available at the present time which indicate that whole cell pertussis vaccine causes either SIDS (sudden infant death syndrome) or 'vaccine encephalopathy.' "[19]

Finally, the federal law has mandated that a new, less reactogenic DTP vaccine be developed. While all look forward to a better vaccine, it is worthwhile to look backward at the fate of a discontinued, extracted pertussis antigen vaccine that was available for over ten years. In 1963, Weihl et al[20] reported on an extracted pertussis vaccine which produced, among infants six weeks to six months of age, a febrile reaction in less than one of seven injections, whereas there were febrile reactions to whole cell vaccine in one of two subjects who were controls. This extracted antigen vaccine was widely employed in this community. The findings on follow-up by practicing physicians confirmed the results of the controlled study that the vaccine was less reactogenic. However, unnoticed by medical organizations, the production of the extracted antigen vaccine was terminated by the manufacturer in the 1970s. Aside from the looming malpractice litigation controversy, a discussion with the area sales representative indicated the manufacturer could not compete successfully for government contracts for the vaccine in competitive bidding. Extracted pertussis vaccine costs more to manufacture than whole cell vaccine, something not considered in competitive bidding regulations.

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Sexual History

Jeffrey A. Beal, MD; Dannie K. Valega, LCSW; Theodore D. Campbell, LCSW

Today the prevalence of sexually transmitted diseases (STDs) and patient reports of sexual dysfunction serves as an impetus for the medical practitioner to incorporate a comprehensive sexual history into the examination of his/her patients. More importantly, we now realize that STDs which may have been acquired years ago are responsible for current or future symptoms (ie, chronic active hepatitis, acquired immune deficiency syndrome [AIDS], anal carcinoma, etc). In this country, STDs are diagnosed in 10 million patients per year and infect people from all walks of life and all age groups. Most individuals are treated as outpatients, but more than a quarter of a million hospital admissions for STDs are necessary each year.

A survey published in the *Archives of Internal Medicine* reported that of 228 patients surveyed, 53% complained of some form of sexual dysfunction. Ninety percent considered it appropriate for the physician to ask about sexual functioning, while of those patients whose MD failed to take a sexual history, 78% indicated it would have been appropriate. Frank et al, in their article "Frequency of Sexual Dysfunction in 'Normal' Couples," observed that in a self-report questionnaire, 40% of men reported erectile or ejaculatory dysfunction, 63% of women reported arousal or organic dysfunction and, in addition, 50% of men and 77% of women reported difficulty that was not dysfunctional (ie, lack of interest or inability to relax).

These statistics serve to impress upon the medical community the need for a comprehensive sexual history for purposes of patient education, risk assessment, medical intervention, and continuity of care. However, all physicians at some point experience discomfort when addressing sexual issues with their patients. To the patient, the physician can represent an awesome stranger who will probe the most intimate aspects of their lives; they also represent a highly knowledgeable authority with the power to make life-and-death decisions. Facilitating the doctor-patient relationship is the most logical way to begin to offset the "uncomfortableness" we can experience in discussing a patient's sexual history.

Humanizing this relationship allows physicians a latitude for questioning patients regarding their sexuality, while offering the patients more of a comfort zone in which to answer these questions. As stated in the above study, 90% of patients questioned feel that it is appropriate for a physician to make these inquiries. As noted above, STDs and sexual dysfunctions affect more of the population than previously thought. If this same percentage of our patient case load presented with any other nonsexual malady, we would not allow social taboos to impede our medical interventions. But due to our cultural training, some consider talking about sexual issues to be "bad form." All physicians acting in the best interest of their patients can no longer justify ignoring or overlooking this area of concern.

The focus of the sexual history outlined below is limited to the identification of those at risk for AIDS. Space does not allow for the needed detailed

history to identify sexual dysfunction. The most important aspect in taking a sexual history is to maintain a very open attitude which is nonjudgmental and does not jump to conclusions. One may begin questioning as a part of the review of systems, the social history, or when appropriate, as a part of the history of present illness. The physician may find it helpful to preface his/her questions with an introductory statement justifying the inquiries, such as: "We are becoming increasingly aware of health conditions that may be related to a person's sexual activity. The questions I am about to ask are sensitive and some people might feel uncomfortable discussing these issues; however, they are important toward assessing your general health status."

In assessing a patient's risk for developing AIDS or other STDs, the major historical factors include:

1. Sexual orientation
2. Number of sexual contacts
3. Types of sexual behaviors practiced
4. Utilization of sexual enhancers.

Suggested format for obtaining this information:

1. Do you have sex with men, women, both or neither?
2. How many different sexual partners (male/female) have you had in the past year? How many different sexual partners (male/female) in your lifetime? The response to this question many times is "I don't know." Reply with "Is it greater than 500 or greater than 1000?" which stimulates the patient to respond with a comfortable, appropriate estimate.
3. Sexual behaviors practiced: oral-penile sex? oral-vaginal sex? oral-anal sex? anal intercourse? vaginal intercourse? Any use of sexual appliances during masturbation or sex? It is important to know if condoms are used or if secretions are exchanged.
4. Use of drugs or alcohol during sexual encounters?

Remember, it is not sexual orientation which transmits disease; it is the sexual behavior. When the patient perceives that the physician is comfortable discussing sexual matters, the patient is more inclined to discuss these topics in an open and honest manner. It is the directive of the American Medical Association, the American College of Physicians, and others that every physician develop the knowledge and skills needed for diagnosing and treating problems associated with HIV infection. The skill of taking a sexual history is the first step toward achieving that goal.

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News from
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Chlamydia — Screening Needs in Oklahoma

Chlamydia was added to the list of reportable diseases for Oklahoma in August 1985. Since that time, reported cases have shown a steady increase, but were still below the estimates of actual disease incidence.

If not identified early, chlamydia infections can have a substantial impact on reproductive health and the health of a newborn. Early identification and treatment could prevent complications that might affect future fertility or pregnancy outcome.

When the national estimate of incidence at 2.5 times that of gonorrhea (9.164 in 1987) is applied to Oklahoma, there could be as many as 23,000 cases of chlamydia occurring in Oklahoma.

To assist in improving the estimates of actual chlamydia occurrence in Oklahoma, the Oklahoma State Department of Health initiated a pilot Chlamydia Screening Program in eight county health departments. The project sought to screen 3,800 sexually transmitted disease (STD) patients, 3,000 family planning patients, and 1,000 maternity patients.

Screening began January 1, 1988. Through October 1, 1988, 7,737 clients were screened. In health department STD clinics, screening identified 549 infected individuals with an 18.6% positivity rate. This compares to gonorrhea screening positivity of approximately 12% in STD clinics. Results in family planning and maternity clinics show an even more dramatic difference. Family planning clinics identified 16.4% positive and maternity clinics 17.2%. Gonorrhea screening positivity for these clinics is 1.6% and 0.9%, respectively. These results suggest that actual incidence may be as high as estimated.

For more information on the chlamydia screening project, contact the Sexually Transmitted Disease Division, (405) 271-4061.

DISEASE	October 1988	TOTAL TO DATE		
		This Year	Last Year	5 Yr. Avg.
AMEBIASIS	1	4	8	9
CAMPYLOBACTER INFECTIONS	12	182	225	217
ENCEPHALITIS, INFECTIOUS	0	4	22	24
GIARDIA INFECTIONS	36	193	173	227
GONORRHEA (Use ODH Form 228)	550	6206	8322	10944
HAEMOPHILUS INFLUENZAE INVASIVE DISEASE	14	162	171	168
HEPATITIS A	40	446	243	409
HEPATITIS B	12	152	217	203
HEPATITIS, NON-A NON-B	5	40	41	48
HEPATITIS UNSPECIFIED	2	23	31	81
MEASLES (RUBEOLA)	0	8	4	11
MENINGITIS, ASEPTIC	11	63	142	167
MENINGITIS, BACTERIAL (non-meningococcal, non H. Influenzae)	0	14	33	48
MENINGOCOCCAL INFECTIONS	4	18	24	26
PERTUSSIS	1	62	149	198
RABIES (Animal)	2	32	33	76
ROCKY MOUNTAIN SPOTTED FEVER	1	84	82	121
RUBELLA	0	1	S	1
SALMONELLA INFECTIONS	47	401	410	419
SHIGELLA INFECTIONS	14	176	135	194
SYPHILIS (Use ODH Form 228)	8	133	154	164
TETANUS	0	1	1	1
TUBERCULOSIS	21	209	208	208
TULAREMIA	2	15	24	21
TYPHOID FEVER	0	0	4	3
MUMPS	16	186	80	—

Diseases of Low Frequency	Total to Date This Year
ACQUIRED IMMUNE DEFICIENCY SYNDROME	136
BRUCELLOSIS	2
LEGIONNAIRES' DISEASE	10
MALARIA	11
REYE SYNDROME	0
TOXIC SHOCK SYNDROME	9

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Ed L. Calhoon, MD

Oklahoma Hall of Fame inducts popular Beaver physician

On November 12 in Oklahoma City, Ed L. Calhoon, MD, and seven fellow Oklahomans were inducted into the Oklahoma Hall of Fame.

Some 2,000 guests, the largest live audience in the event's history, crowded the Great Hall of the Myriad Convention Center for the sixtieth annual banquet and induction ceremony.

Governor Henry Bellmon presented the Hall of Fame medallion to Dr Calhoon following delivery of the citation and an introduction by American Medical Association President James E. Davis, MD.

In his remarks, Dr Davis noted that Dr Calhoon, a family physician and surgeon from Beaver, is "truly a citizen of the world."

He said that Dr Calhoon, educated in Oklahoma and practicing in the small town where he was born, "epitomizes what a physician is — a man who is dedicated to the medical care of his community. He cares about what happens in this country, at the same time caring for a newborn child he has just delivered, or a longtime neighbor he has treated professionally and worked beside as a friend. He still makes house calls, and everyone in Beaver knows him."

Dr Davis concluded: "Ed Latta Calhoon epitomizes the spirit and image of Oklahoma — modern and productive, with a strong flavor of frontier spirit and self-reliance. His friendliness, hard work, ambition, self-sacrifice, love of family, honesty, and teamwork are in the finest tradition of rural Oklahoma.

"Ed Calhoon's dedication to medicine, whether practiced in serving a neighbor in his hometown or in fighting for a cause to help all humanity worldwide, has earned him a place in the Oklahoma Hall of Fame."

Dr Calhoon, after thanking Dr Davis, spoke of his appreciation and love for his state, its people, and his profession:

> I have a fond memory of a small, one-room country schoolhouse in the panhandle of Oklahoma in the early thirties with four small boys in attendance, transferring on to the high school during the dust bowl days — for many days, when the dust would settle, you could write your name on the desktop — on through college, and finally graduating from the University of Oklahoma School of Medicine. It seems, therefore, Governor Bellmon, entirely appropriate that I take this rather unique opportunity to express my appreciation to, first and foremost, the taxpayers of this great state, the lawmakers, and the educators for making it possible to achieve a quality education in this state.
>
> My background was a modest Christian home where the traditional values of decency, honesty, hard work, and integrity were stressed. Sitting in this room tonight are many physicians, virtually the entire policymaking body of the Oklahoma State Medical Association, also legal counsel and members of our medical malpractice insurance trust. I'm sure Dr Ray McIntyre, president of our state medical organization and classmate of mine, and a most marvelous man indeed, would agree that these people do indeed epitomize these traditional trusts.

Hall of Fame inductee Ed L. Calhoon, MD, (r) receives congratulations from OSMA Secretary-Treasurer James D. Funnell, MD.

(continued)

AMA President Davis outlines the achievements of Dr Calhoon

Ed L. Calhoon, MD, inducted into the Oklahoma Hall of Fame on November 12, has amassed an impressive list of achievements, awards, and activities. Many were mentioned by American Medical Association (AMA) President James E. Davis, MD, as he delivered Dr Calhoon's citation during the induction ceremony:

Dr Calhoon has been a preceptor professor at the University of Oklahoma Health Sciences Center since 1954. He is a past president of the University of Oklahoma Medical School Alumni Association and was that group's 1980 Honored Medical Alumnus. In 1984 he was named Physician of the Year by the University of Oklahoma Health Sciences Center.

In 1970-71, Dr Calhoon served as president of the Oklahoma State Medical Association (OSMA). He continues to be an OSMA delegate to the AMA.

He was a member of the AMA's Council on Rural Health for four years and was also on its Council on Legislation.

The National Health Care Advisory Board appointed Dr Calhoon to study health care systems in the United Kingdom in 1973, and he has been a member of the International College of Surgeons since 1960.

By Presidential appointment he serves on the National Cancer Advisory Board of the National Cancer Institute. He has also served on the National Advisory Council for Health Care Systems of the National Institutes of Health.

Dr Calhoon has been awarded the A.H. Robins Community Service Award and an OSMA Award of Special Merit.

Active in politics, Dr Calhoon has been a delegate to the Republican National Convention and has served as state chairman or co-chairman for Republican Presidential candidates. He has been a member of the Oklahoma State Republican Executive Committee and the Oklahoma State Republican Finance Committee. He is a former chairman of the Oklahoma Medical Political Action Committee.

In his community, Dr Calhoon is a member and past president of the Beaver Rotary Club.

Ed Calhoon speaks to guests at his Oklahoma Hall of Fame induction.

Oklahoma Hall of Fame (continued)

I've had a lifelong love affair with the panhandle of Oklahoma. I see beauty in the grass-filled plains, the purple sage, the spring wildflowers, the upland game birds, the glowing sunsets, but most of all its people, the independent, enterprising spirit of its people. People such as Tim and Nancy Leonard and their marvelous family — my patients, my friends.

I have many concerns for medicine in America. We indeed become perhaps victims of our expertise, but even so, with the new technologies, it's still an exciting time to practice medicine. There are for me personally two unresolved, desperate conditions that need to be solved. We simply must find a cure for cancer. Five hundred thousand premature deaths from this terrible malady each year is totally unacceptable. It's also imperative that we stop the flow and use of illicit drugs in this great republic of ours.

Finally, to the members of the Oklahoma Heritage Association, Mr Harold Stewart, our president, for making this evening possible, my deep, humble, and abiding gratitude.

May God bless you.

Half from Oklahoma City

OSMA trustees meet November 20, approve sixteen Life Members

At its November 20 meeting in Oklahoma City, the Oklahoma State Medical Association's Board of Trustees approved sixteen applications for Life Memberships.

The new Life Members from Oklahoma City are William L. Bond, MD; Charles L. Delhotal, MD; J. Thermon McInnis, MD; John R. McInnis, MD; Robert A. McLauchlin, MD; E. Norris Robertson, Jr., MD; Lawrence Stream, MD; and Harry C. Wolohon, MD.

Also approved were applications from John Gilbert, MD; Thomas C. Glasscock, MD; Vernon C. Merrifield, MD; and Edwin C. Yeary, MD, Ponca City.

Other Life Memberships approved were those of Glen Floyd, MD, Bartlesville; Jerold D. Kethley, MD, Shawnee; Donald F. Mauritson, MD, Tulsa; and James F. Tagge, MD, Enid.

Any OSMA member in good standing is eligible for Life Membership by meeting one or more of the following qualifications: (a) retired from the active practice of medicine due to ill health or age, (b) engaged in the active practice of medicine for fifty years or more, or (c) attained the age of seventy years.

Still available: free DEA booklet on Controlled Substances Act

The Oklahoma State Medical Association (OSMA) is continuing to fill requests for free copies of *Physician's Manual.*

The 40-page booklet is designed to help physicians understand the Controlled Substances Act of 1970 and its regulations as they apply to medical practitioners.

Included are sections on record keeping and inventory requirements, tips and guidelines for prescribers of controlled substances, registration, security, drug theft, and prescription orders.

The booklet was published by the US Department of Justice Drug Enforcement Agency (DEA).

To obtain a copy of the publication, contact the OSMA, 601 Northwest Expressway, Oklahoma City, OK 73118, (405) 843-9571 or 1-800-522-9452.

DEATHS

Frank Herbert Austin, MD
1922 - 1988

OSMA Life Member Frank H. Austin, MD, Lawton, died November 8, 1988. Born in Watertown, SD, Dr Austin was graduated from the University of Oklahoma Medical School in 1946. He served in the US Army Medical Corps for six years, achieving the rank of major. After leaving the service in 1954, he opened a private internal medicine practice in Lawton.

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Visiting professor reports failure of ventilator circuit tubing

To the Editor: Vigilance in the operating room is focused mainly on the patient. However, equal attention has to be paid to the anesthetic apparatus. We would like to report a failure in an anesthetic ventilator circuit.

After the induction of anesthesia, neuromuscular blockade and endotracheal intubation the patient was mechanically ventilated via a disposable ventilator circuit (Fig 1). Chest movement and bilateral breath sounds were compatible with adequate ventilation. The end-tidal carbon dioxide tracing on the capnograph was normal and the peak inspiratory pressures were unremarkable. However a draft of cold gas, and then the odor of a volatile agent, was detected along the ventilator circuit tubing. Further investigation revealed a small hole on the crest of a corrugation in the tubing adjacent to a seam (Fig 2) approximately 15 cm from the patient's end of the circuit.

The FiO2 was immediately changed to 1.0 and the circuit tubing was replaced. The oxygen saturation did not drop below 99% and the end-tidal carbon dioxide monitor and disconnection alarms had insufficient time to sound during the changeover. The remainder of the case proceeded uneventfully and the patient made a complete recovery. The holed circuit was then leak tested on another anesthetic machine. At a maintained pressure of 20 cm of water there was a leak of 3 liters per second.

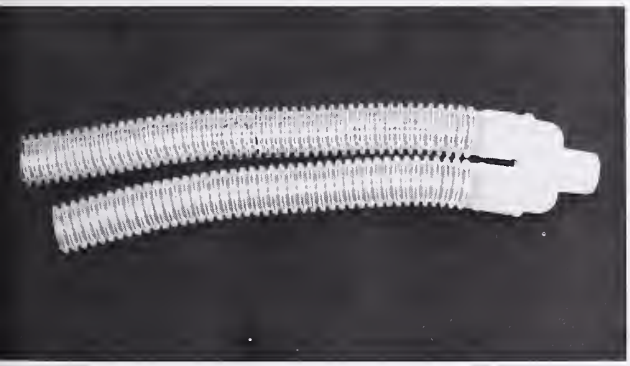

Figure 1.

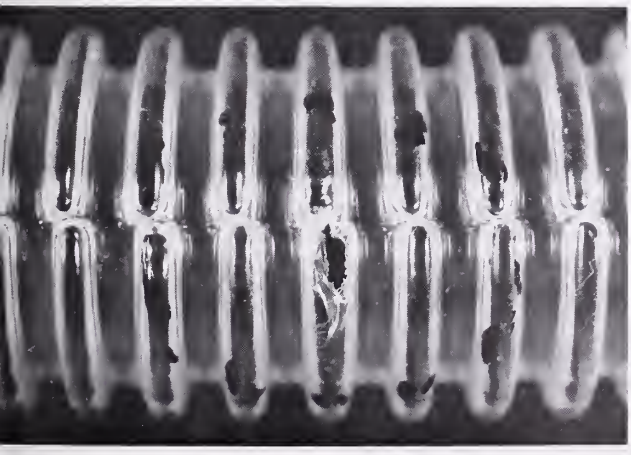

Figure 2.

Discussion

Disposable ventilator circuits are made by extruding under pressure hot plastic into a two-piece die cast. A potential weakness in the corrugation can occur

(continued)

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if the two halves of the die do not close completely or if there are any air bubbles in the plastic. Quality control on sample products is performed 4-5 times during the manufacturing process. This includes a pressurized leak test with air at 60 cm of water on the finished corrugated tubing. As reported to us by the manufacturer, there is a statistical failure rate of less than 0.65% on the delivered product. In theory, each product is then tested by the individual anesthesiologist preparing to give an anesthetic. In this case, the anesthetic machine had been leak tested in the morning, and this particular circuit was checked for leaks prior to the induction of anesthesia. We had performed a pressure maintenance test with a high gas flow of 8 liters per minute. No significant leak had been detected then. During pre-oxygenation and mask intermittant positive pressure ventilation, the apparatus functioned normally. Any gas leak during mask ventilation was assumed to be due to a poorly fitting mask. Oxygen was added to the circle system from the oxygen bypass supply.

The leak became apparent when mechanical ventilation started. We do not know if the defect in the tubing was already present or if it was created by blowing a weak spot in the plastic wall of the tubing during positive pressure ventilation.

We were fortunate that the leak was detected early and the patient came to no harm. We would remind all anesthesiologists of the importance of a circuit leak test. We would recommend the use of low flow rates and relatively high pressures, 40-60 cm of water, during the test. Statistically, 6 in every 1000 ventilator circuit tubings will fail. A simple test can avoid a catastrophe.

—Mark B. Smith, FFARCS
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References:

1. A. Morales et al., New England Journal of Medicine: 1221. November 12, 1981.
2. Goodman, Gilman — The Pharmacological basis of Therapeutics 6th ed., p. 176-188. McMillan December Rev. 1/85.
3. Weekly Urological Clinical letter, 27:2, July 4, 1983.
4. A. Morales et al., The Journal of Urology 128: 45-47, 1982.

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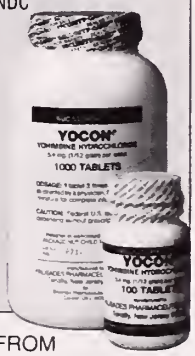

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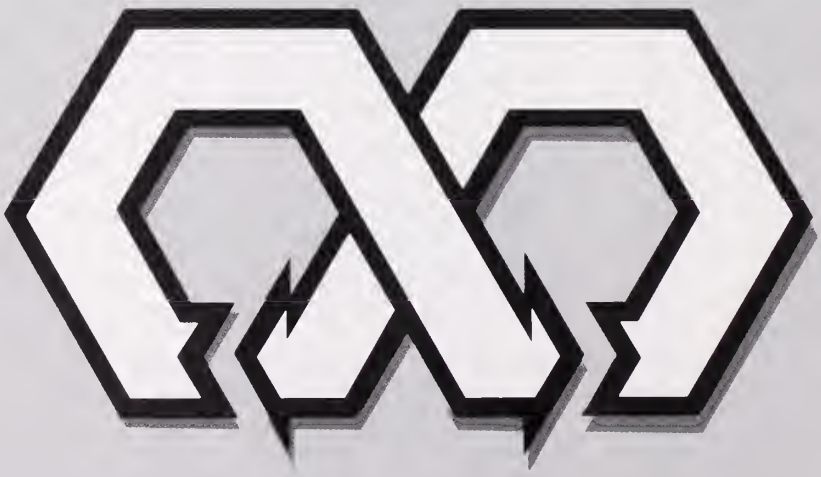

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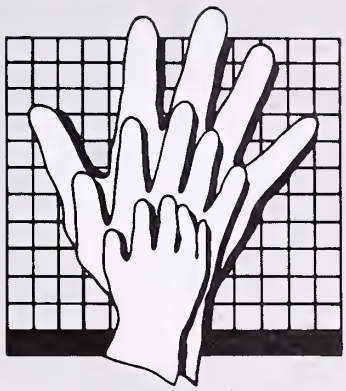

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Readers are encouraged to submit news items of interest to Oklahoma physicians. Where dates of meetings, etc, are important, please remember that each issue closes on the first day of the *preceding* month and reaches subscribers in the latter half of the month of publication.

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Medicine Day at the State Capitol — March 8, 1989

Legislation has become a primary focus of auxiliaries across the country — a focus which is being encouraged by state and county medical societies and which is creating many programs as joint efforts of the auxiliary and medical societies. And certainly, Oklahoma is no exception — the partnership relationship that we enjoy with our medical association is the envy of many states! But it's the working together — everyone in the medical community — that is so vitally important to impact the rapidly changing medical environment that physicians are constantly meeting head-on. Because someone other than a medical authority is too often making the decisions in our legislative bodies, it is *more important than ever before* that you and your spouse and members of the medical community take on the aggressive role of patient advocate.

Together, the Oklahoma State Medical Association and the Oklahoma State Medical Association Auxiliary are planning the THIRD ANNUAL MEDICINE DAY AT THE STATE CAPITOL. Get out your calendars now and put a red circle around MARCH 8, 1989, and commit to spending that day at the capitol, and put it on your physician spouse's calendar, too! The day will begin with registration at 9:00 AM in the capitol rotunda and end at 2:00 PM and will be filled with tours, time to meet with your legislators, lunch, and some exciting "special guest speakers." You won't want to miss this fun and exciting day or the opportunity to show the legislators that medicine is watching and that we're going to take an active role on medical issues affecting our communities.

There are many new faces in this session of the legislature and we need to meet them, know who they are and what they stand for, and let them know that we're available to supply them with information on medical issues that arise during this legislative session. No other segment of the population is better equipped than the medical community to lend its expertise to lawmakers who are setting policy affecting how our physicians can practice medicine in this state. If you have not been involved before, there's no time like the present. And I urge you to make a commitment to yourself to work for medicine.

Let MEDICINE DAY AT THE STATE CAPITOL — MARCH 8, 1989 — be a part of that commitment. You have the opportunity to make a difference. Don't let that opportunity pass you by.

As Franklin D. Roosevelt said, "Let us never forget that government is ourselves and not an alien power over us. The ultimate rulers of our democracy are not a president and senators and congressmen and government officials, but the voters of this country."

—Sherry S. Strebel (Gary F.)
State Legislation Chairman

■ **The Department of Anatomical Sciences has** announced the formation of the Dr Kenneth K. Faulkner Memorial Scholarship Fund. The fund is dedicated to the memory of Dr Faulkner, department head, who died November 20, 1988. He had served in the department since 1954, becoming department head in 1981. Contributions may be directed to Dr Kyung W. Chung, Department of Anatomical Sciences, University of Oklahoma College of Medicine, PO Box 26901, Oklahoma City, OK 73190.

■ **The third annual Medicine Day at the State** Capitol, a joint project of the Oklahoma State Medical Association and OSMA Auxiliary, will be Wednesday, March 8. Mark your calendar and start planning now to meet your legislators. Registration will be at 9 AM in the capitol rotunda; the program will end at 2 PM.

■ **Speakers Bureau training workshops are** available through the Oklahoma State Department of Health AIDS Division. Persons wanting to become HIV/AIDS educators within their communities or agencies are urged to attend a three-day workshop designed to provide factual information about HIV infection and statistical trends and to identify issues related to the epidemic. Certification through this program is competency based, requiring a written examination and oral presentation during the workshop. Limited enrollment requires preregistration at least one month in advance. If you are interested or would like more information call (405) 271-4636 between 8 AM and 4:30 PM. Workshops are offered in both Oklahoma City and Tulsa.

■ **The 1989 Annual Meeting of the Oklahoma** State Medical Association will be Thursday through Saturday, May 4-6, at the Sheraton Kensington Hotel in Tulsa.

■ **Still available from the American Medical** Association Auxiliary is a booklet entitled "What Every Physician's Spouse Should Know . . . Medical Family Support." The booklet focuses on understanding the unique pressures of medical life, developing personal coping skills, finding peer support, and creating support mechanisms. The booklets are $3 each for AMA Auxiliary members and $5 for nonmembers. Send prepaid orders to AMA Auxiliary Headquarters, 535 N Dearborn Street, Chicago, IL 60610.

■ **Oklahoma Medical Political Action Committee** (OMPAC) dues statements go out this month. Physicians are reminded that 40 candidates supported by OMPAC were winners in November, while only 3 OMPAC candidates were defeated. Although the OMPAC board carefully analyzes the candidates' voting records, OMPAC chairman Larry L. Long, MD, Oklahoma City, attributes much of this year's success to input from member physicians.

■ **A report in December's *Archives of Otolaryngology-Head and Neck Surgery*** takes issue with a recent *New England Journal of Medicine (NEJM)* study on Yellow Pages advertising by physicians. That report examined the credentials of doctors listed under specialty headings in one city's Yellow Pages and said many — especially those listed under Plastic Surgery — were not board-certified. But the new study, by Steven M. Denenberg, MD, of the University of Nebraska Medical Center, Omaha, and Howard W. Smith, MD, DMD, of the Yale University Medical School, New Haven, Conn, says the *NEJM* authors used inaccurate assumptions and flawed methodology in reaching their conclusions. The actual percentage of listed "plastic surgeons" who were not board-certified was much lower, say the authors. "The public is not being deceived by current practices of physician advertising in the Yellow Pages," the authors conclude. "No change or further regulation of Yellow Pages advertising is necessary."

■ **Do Not Resuscitate (DNR) orders seem to be** the rule rather than the exception for hospitalized patients who die, a study in November's *Archives of Internal Medicine* indicates. But, say authors Palmi V. Jonsson, MD, of the Hebrew Rehabilitation Center for the Aged, Roslindale, Mass, and colleagues, decisions about entering DNR orders appear to be made late in an illness and involve family members more than patients. The study involved 244 patients who died during two three-month periods in 1982 and 1986 in a community teaching hospital. DNR orders were written for 68% overall, including 94% of those with malignancies and half of those with cardiac disease (the prevalence of DNR orders in heart cases rose sharply from 1982 to 1986). About 60% of orders were written within three days of death, and documentation showed that 77% of families but only 14% of patients were consulted about the order.

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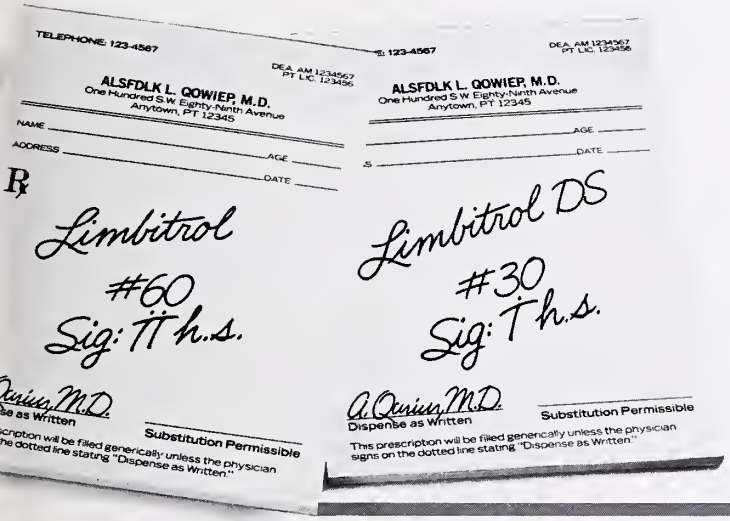

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thdrawal symptoms of the barbiturate type have occurred after discontinuation of benzodiazeies (see Drug Abuse and Dependence).

ecautions: Use cautiously in patients with a history of seizures, in hyperthyroid patients, ose on thyroid medication, patients with impaired renal or hepatic function. Because of suicidal ation in depressed patients, do not permit easy access to large quantities of drug. Periodic liver ıction tests and blood counts recommended during prolonged treatment. Amitriptyline may ck action of guanethidine or similar antihypertensives. When tricyclic antidepressants are ed concomitantly with cimetidine (Tagamet), clinically significant effects have been reported volving delayed elimination and increasing steady-state concentrations of the tricyclic drugs. e of Limbitrol with other psychotropic drugs has not been evaluated; sedative effects may be ditive. Discontinue several days before surgery. Limit concomitant administration of ECT to sential treatment. See Warnings for precautions about pregnancy. Should not be taken during nursing period or by children under 12. In elderly and debilitated, limit to smallest effective sage to preclude ataxia, oversedation, confusion or anticholinergic effects. Inform patients to nsult physician before increasing dose or abruptly discontinuing this drug.

Adverse Reactions: Most frequent: drowsiness, dry mouth, constipation, blurred vision, dizziness, bloating. Less frequent: vivid dreams, impotence, tremor, confusion, nasal congestion. Rare: granulocytopenia, jaundice, hepatic dysfunction. Others: many symptoms associated with depression including anorexia, fatigue, weakness, restlessness, lethargy.

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Drug Abuse and Dependence: Withdrawal symptoms similar to those noted with barbiturates and alcohol have occurred following abrupt discontinuance of chlordiazepoxide; more severe seen after excessive doses over extended periods; milder after taking continuously at therapeutic levels for several months. Withdrawal symptoms also reported with abrupt amitriptyline discontinuation. Therefore, after extended therapy, avoid abrupt discontinuation and taper dosage. Carefully supervise addiction-prone individuals because of predisposition to habituation and dependence.

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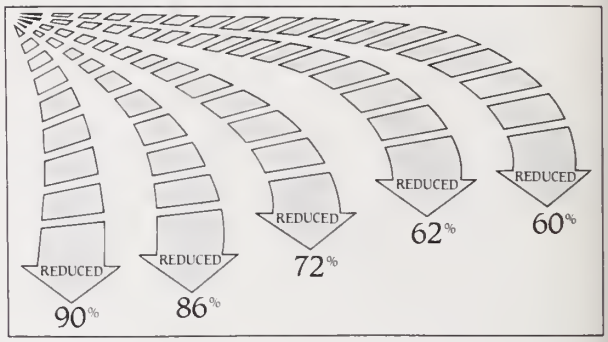

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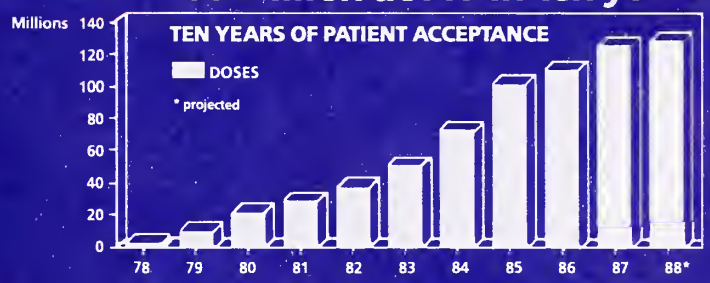

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1. Data on file, Knoll Pharmaceuticals
2. Hopkinson JH III. *Curr Ther Res* 24:503-516, 1978
3. Beaver WT. *Arch Intern Med*, 141:293-300, 1981.

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Acute Abdominal Conditions: The administration of narcotics may obscure the diagnosis or clinical course of patients with acute abdominal conditions.
PRECAUTIONS:
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Information for Patients: VICODIN, like all narcotics, may impair the mental and/or physical abilities required for the performance of potentially hazardous tasks such as driving a car or operating machinery; patients should be cautioned accordingly.
Cough Reflex: Hydrocodone suppresses the cough reflex; as with all narcotics, caution should be exercised when VICODIN is used postoperatively and in patients with pulmonary disease.
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Nonteratogenic effects: Babies born to mothers who have been taking opioids regularly prior to delivery will be physically dependent. The withdrawal signs include irritability and excessive crying, tremors, hyperactive reflexes, increased respiratory rate, increased stools, sneezing, yawning, vomiting, and fever. The intensity of the syndrome does not always correlate with the duration of material opioid use or dose. There is no consensus on the best method of managing withdrawal. Chlorpromazine 0.7 to 1.0 mg/kg q6h, and paregoric 2 to 4 drops/kg q4h, have been used to treat withdrawal symptoms in infants. The duration of therapy is 4 to 28 days, with the dosage decreased as tolerated.
Labor and Delivery: As with all narcotics, administration of VICODIN to the mother shortly before delivery may result in some degree of respiratory depression in the newborn, especially if higher doses are used.
Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk and because of the potential for serious adverse reactions in nursing infants from VICODIN, a decision should be made whether to discontinue nursing or to discontinue the drug, taking into account the importance of the drug to the mother.
Pediatric Use: Safety and effectiveness in children have not been established.
ADVERSE REACTIONS:
Central Nervous System: Sedation, drowsiness, mental clouding, lethargy, impairment of mental and physical performance, anxiety, fear, dysphoria, dizziness, psychic dependence, mood changes.
Gastrointestinal System: Nausea and vomiting may occur; they are more frequent in ambulatory than in recumbent patients. The antiemetic phenothiazines are useful in suppressing these effects; however, some phenothiazine derivatives seem to be antianalgesic and to increase the amount of narcotic required to produce pain relief, while other phenothiazines reduce the amount of narcotic required to produce a given level of analgesia. Prolonged administration of VICODIN may produce constipation.
Genitourinary System: Ureteral spasm, spasm of vesical sphincters and urinary retention have been reported.
Respiratory Depression: (See WARNINGS.)
DOSAGE AND ADMINISTRATION: Dosage should be adjusted according to the severity of the pain and the response of the patient. However, tolerance to hydrocodone can develop with continued use and the incidence of untoward effects is dose related.
The usual adult dosage is one or two tablets every four to six hours as needed for pain. The total 24 hour dose should not exceed 8 tablets.

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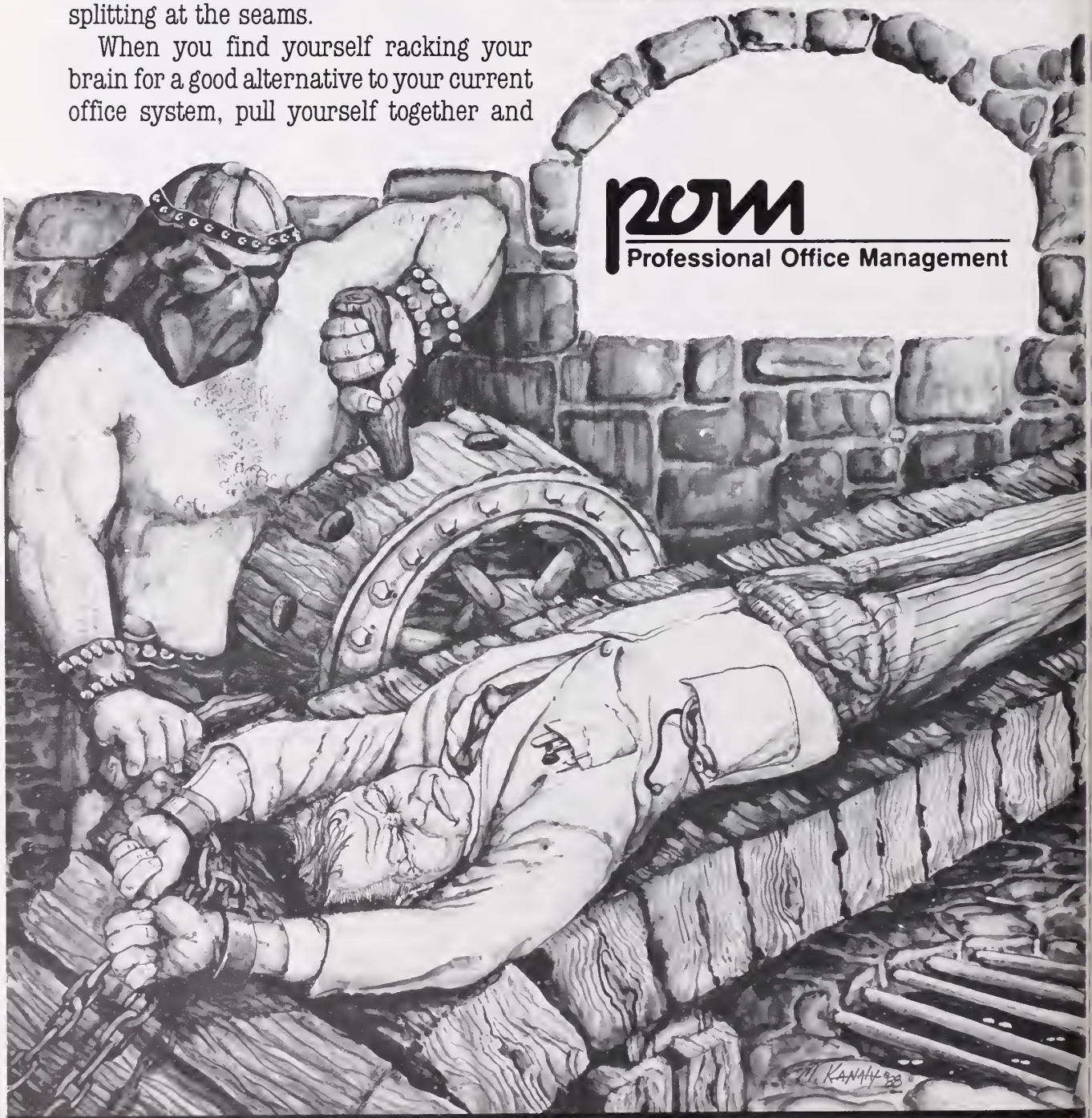

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JOURNAL

OKLAHOMA STATE MEDICAL ASSOCIATION

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Put the Patients Back

Something is missing in today's relationships between physicians and their patients. Its disappearance has been so gradual and insidious that virtually no one has noticed it is gone. In the wake of its departure, however, the quality, appropriateness, and acceptability of care have declined while the costs and complaints generated by that care have risen. The traditional bond of trust between physicians and patients has been replaced by alienation at best, suspicion at worst.

The missing element is the authority of the patient. It has been almost totally replaced by a battery of usurpers, appointed by insurance companies and bureaucrats, tolerated by patients and physicians, embraced by hospitals and other merchandisers in the health care industry.

No longer can patients decide how often they need to see their physicians or how long they will stay in a hospital without risking a variety of unreasonable and irrational penalties.

No longer does the patient have a right to select his or her physician or hospital, his or her consultants.

No longer do patients have the right to determine what their physicians will be paid for their services. Only incidentally do patients exercise any control over the design of those services.

No longer are patients even involved in negotiating the terms of their care.

In essence, patients have been stripped of virtually all influence in decisions relating to their health care. They are ignored. Their desires and their opinions count for nothing.

Reinstating the authority of the patient is a growing imperative. It is essential to the effective, honest utilization of our resources. It will minimize the potential for fraud throughout the system. It will return to the patient the dignity, the respect, and the thoroughly appropriate role as the decision maker in all issues affecting his or her medical care.

Relatively speaking, putting patients back in charge of their care can be quite simple. Provide all patients who are beneficiaries of health care insurance policies with a supply of affidavits which will attest to the facts relating to every submitted claim. The patient or an appropriate agent will attest by signing the affidavit that the services for which the claim is filed were in fact provided in accordance with the patient's understanding and acceptance.

The affidavits could attest to facts such as the amount of time the physician devoted to the service, the fact that the need for a consultant was explained by the primary physician and that the patient approved of the consultant selected, that the patient did request and receive care from additional physicians and present the reason for the request, that the patient had reviewed all claims, authorized their submission, and agrees that the physicians signing the claims are entitled to the designated payments.

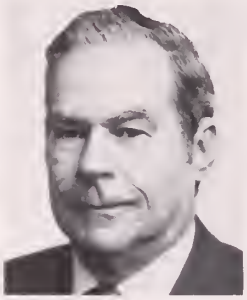
In addition to the obvious benefits of such a plan, putting patients back into the system of medical care controls would promote a return to the traditional, time honored relationship between patients and their physicians: trust and confidence founded in complete honesty and mutual respect.

Putting the patients back might return to us the advocates who were stolen from us when we were robbed of our profession.

God knows, we need all the advocates we can find.

—MRJ

PRESIDENT'S PAGE



Child abuse is an age-old problem that has lately become more disturbing as we better understand the resultant emotional havoc.

The true frequency of this malignant violence is hidden by a veil of fear, indifference, and shame. It may be becoming more frequent, and it was officially blamed for 31 children's deaths in Oklahoma in 1987.

Many thousands of cases of alleged child abuse are reported annually in Oklahoma, and abuse is a major cause of childhood emotional and physical injury. Many incidents are complicated by vindictive custody disputes, itinerancy, and transgenerational transmission.

The inciting event of an episode of child abuse may come from a variety of human stresses, impulsiveness, alcohol or drug abuse, or misdirected anger. Regardless of the trigger, child abuse is an expression of mental or emotional illness in the caretaker that is now rarely being addressed. Most cases initially seem to be outside the criminal justice system. Many are "solved" by temporary custody changes that leave the disturbed caretaker unchanged and unrestrained.

In Oklahoma, the physician's role in child abuse currently is to establish medically that child abuse has, in fact, taken place. These facts are then used by the caseworker or the district attorney in the management of the child abuse episode. Unfortunately, only a small part of the many cases are seen by physicians who are experienced in a forensic examination for child abuse, and the quality of the evidence elicited may suffer. Also, the follow-up supervision of the disturbed caretaker is presently erratic, and treatment is rarely effected.

A positive approach to the present problem in Oklahoma requires new directions from the medical profession, the legal profession, and the social workers.

We propose that Oklahoma recruit a corps of trained forensic child abuse examiners to cover the entire state through a State Child Abuse Examiner law similar to our present State Medical Examiner system for unexplained deaths. We should develop the legislation to establish, fund, and maintain a child abuse examiner system. The statutes should provide for appointment and training, and protect the official examiner from civil liabilities and subpoenas. The mandate should provide for necessary follow-ups, administrative support, and adequate compensation for the examiner.

With a corps of expert forensic examiners protected from familial and legal harassment, the improved medical evidence available to the social worker and the district attorney will provide a valid basis for forced treatment of the disturbed caretaker and for the custody changes necessary to protect the threatened child.

If the age-old cycle of child abuse is to be broken, we must provide the next generation of Oklahoma children a chance to mature without abuse. The help and cooperation of judges, district attorneys, social workers, and psychiatrists will be needed, but an expert and coordinated corps of official child abuse examiners could open the door to a new era in the abatement of child abuse.

When the corps of physician examiners provides prompt and scientific evidence that child abuse has occurred, the legal system will be fortified in the use of their police power to temporarily protect the child and institute a supervised treatment experience for the caretaker that would prevent future injury to the child and siblings. A state central agency to collate data, ensure follow-up, and trace the itinerant cases would prevent many deaths.

The parents of future generations need a secure, abuse-free childhood. We physicians can help.

Kay V. McIntyre, M.D.

Stress and the Workplace

David W. Paul, MD, MPH

Stress has never been as prevalent in Oklahoma as it has the last few years. Oklahoma workers are being stressed from multiple sources. It is a challenge we must help them face.

We often refer to stress as existing when demands exceed our capacities. Although stress is both good and bad, we most often think of it in the negative sense as the result of "distress." As is generally the case in medicine, the simple definition is inadequate for application to the wide range of human situations that present to our offices.

Since the initial conceptualization of "stress" by Hans Selye, the term has become quite popular among the professions, public, and media. Initially, most attention was given to physical stressors such as heat and noise; however, psychological stressors (sense of threat, fear, or uncertainty) may produce similar results. Normally, human beings function within a range of physical and psychological arousal. When we deviate from that normal range either from too much or too little stimulation, we experience stress. Walter Cannon used the term "fight or flight" to describe the increased sympathetic activity associated with stress. Physiologically, the body may respond to high demand situations with high catecholamines and to low control situations with increased cortisol production. Also, increased insulin, increased growth hormone, and variable changes in testosterone are found in stress conditions.[1]

Our inborn tendency is to attempt to maintain ourselves within the normal range of arousal by changing the external environment or by using perceptual reappraisal or cognitive restructuring to redefine the experience as less stressful. If those attempts are unsuccessful, psychological and physical fatigue may lead to pathologic results. Coronary heart disease, diabetes mellitus, hypertension, ulcers and rheumatoid arthritis are reported to have psychogenic causal components.[2]

Job Related Stress

It may not be surprising to realize what a large portion of stress complaints will involve the workplace in some fashion. People need and want to work. We work to get basic resources for existence, to extract satisfaction from our job, and enjoy social encounters in the workplace. Work is closely tied to self identification and esteem.[3]

Over the past five years, an undesirable economic trend in Oklahoma has resulted in the loss of thousands of jobs. Loss of one's job may influence personal and family health in many ways. Initial responses to loss of employment include disbelief, pessimism, and loss of self-esteem. Family roles may be disrupted. A spouse will mirror the psychologic responses of the mate, becoming more anxious and depressed as unemployment progresses. These behavioral responses may be evident in the children, too. A layoff may also affect workers who maintain

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their job. Additional job duties, speed ups, and overtime are stressful in those who continue to work.[4]

Reduced capacities at work make stress more troublesome. Obviously a low intellectual potential, as in the learning disabled or mentally retarded, represents a reduced capacity. Similarly, obsolete job skills are often experienced as stressful. Primary psychiatric disease (depression, personality disorder) or drug abuse can certainly impair capacity. Other sources of reduced capacity include low social support networks (company morale) and extra-job demands (family disharmony).

Health professionals should become advocates for company policies and activities that reduce the stress of layoffs.

Personality characteristics influence the perception and interpretation of life events and feelings of being able to cope with them. Studies have related cancer mortality to coping styles characterized by passivity and learned helplessness.[5] Obsessive-compulsive people are prone to anxiety and worry. On the other hand, self-esteem and social "belongingness" have been shown to buffer the effects of stress, protecting against the effects of adverse life events.[6]

A worker might experience increased stress due to increased demands. Some jobs are simply inherently more stressful than others, particularly when an individual is responsible for meeting the needs of others under his supervision. Up to 45% of managers suffer from psychosocial stress and tend to be troubled with hypertension, ulcers, and myocardial infarction.[7]

Features of the organizational structure and climate may influence the expression of stress related problems. A study at the Goddard Space Flight Center revealed that people who participate in decision making at work have higher self-esteem and perceived greater opportunities for advancement.[7] Another study found that people excluded from participation experienced low self-esteem and low job satisfaction, as well as poor general health, substance abuse, depressed mood, and absenteeism. These same results were reported for settings in which there was uncertainty about the future (lack of job security, obsolescence, or forced early retirement).[8]

Another source of stress in the workplace is role ambiguity (lack of clarity concerning objectives to be achieved in the work role, about the scope and responsibilities of the job, and about colleagues' expectations concerning the work role). As role ambiguity increases, workers report low self-confidence, high job related tension, intense futility, and minimal job satisfaction. Studies have also related role ambiguity to poor mental health, dissatisfaction with life, decreased motivation to work,[8] as well as increased heart rate and blood pressure, and abnormal electrocardiograms suggestive of coronary heart disease.[7]

Shift work is an example of a particularly stressful work practice. The day worker goes home to an evening with family and friends, sleeps nights, and enjoys days off. The evening worker goes home to a sleeping family, finally gets to sleep only to awaken later after the children are at school and the spouse is off to work. The night worker is completely at odds with the bulk of the world's cycle in terms of recreation, social activities, and family events. Even if the worker can be awake at the proper hour, he or she isn't physically able to fully enjoy the activity due to persistent feelings of fatigue. Shift work alters both body temperature and sleep cycles. The resultant health effects are particularly manifest in gastrointestinal and digestive problems.[9]

Another common work practice is work pacing. Particularly with machine paced work, workers complain of monotony, feelings of anonymity, high job dissatisfaction, tension, underuse of abilities, and general mental strain and have frequent absenteeism. Feelings of exhaustion at the end of the shift and inability to relax soon after work are related to increased adrenaline secretion.[10] One may conclude that lack of control over work was an important factor in these workers.

Intervention Strategies

How do we as physicians in Oklahoma assist our patients in dealing with these stressful situations? First, we can assist in matching the worker's capabilities to job requirements. Job counseling may be of benefit in some cases; but often simple suggestions by the physician knowledgeable in the given workplace are helpful. One consideration might be job rotation or job enrichment. According to the "Hawthorne effect," any change in the workplace that expresses interest by management in their

workers will increase productivity by twenty percent.[11]

Health professionals should become advocates for company policies and activities that reduce the stress of layoffs. These activities might include advance worker notification of layoffs, job retraining, and ensuring continuity of benefits. Providers can help nurture supportive home environments. We can utilize social service agencies to help unemployed workers, and provide counseling and instruction in coping strategies. In essence, physicians and managers should try to dispel feelings of low self worth, lack of control, and low morale.

Although shift work often cannot be changed due to management preferences, it might be possible to persuade them to try clockwise shift rotation. The physiologic effects are similar to jet lag, and our bodies accommodate clockwise time changes much more readily. However, there will always be some dysfunction with shift work regardless of changes.

Where drug impairment is a problem, employee assistance programs are increasingly available through the employer to help escape the dependence. Similarly, workers with family or emotional problems can be helped with employee assistance programs and/or appropriate referral.

The most effective means of controlling stress is to act directly on the source of stress to effect desired change. Where people have little control over the source of stress, alternative means of coping become necessary. Local churches are well suited to assist with stressful situations. They offer pastoral counseling programs, beneficent ministries, and social and spiritual support. Clubs of all kinds are a beneficial source of social contact. The function of labor unions may give workers an added perception of control or influence over the workplace. The added social dimension of union activities are also helpful.

Stress reduction programs may teach people to manage their perception of stress as well as some of its physical manifestations. These programs typically include instruction in muscle relaxation, biofeedback, and social support. Sports and recreational physical activities help increase self-esteem, reduce morbidity, and reduce stress induced catecholamine levels. The logic behind such programs is that the more coping tools people have, the better they can deal with stress.

Finally, and perhaps most importantly, I encourage Oklahoma physicians to enlarge their concept of family systems assessment and therapy to include the workplace. Most of the same systemic processes that occur in the family take place in the workplace. Families and workplaces can be seen as facets of a single system, a viewpoint helpful to explain stress and to formulate intervention strategies.

Acknowledgment

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Increased Lead Absorption and Lead Poisoning from a Retained Bullet

Vincent Fiorica, MD, PhD, and J. E. Brinker, MD

Whereas lead bullets retained in bone or soft tissues are relatively harmless, fragments that lodge in joints can result in lead poisoning years after the original incident.

Occupational exposure to elemental lead or to lead compounds is the principal source of chronic lead intoxication for adults in the United States.[1] Non-occupational contact with a variety of lead-containing materials is also known to be an important, although secondary, cause of lead poisoning and a number of instances have been cited.[1] Among those less widely recognized non-occupational causes of lead poisoning is that associated with retained lead bullets or shot. Case reports describing lead intoxication resulting from retained lead bullet fragments have been published recently and certain features common to such cases have been considered.[2,3] This report details our experience with the diagnosis and management of a patient with increased lead absorption associated with a retained lead bullet and reviews the literature pertinent to this unusual cause of chronic lead poisoning.

Case Report

The patient, a 28-year-old white man, presented to the Veterans Administration (VA) Medical Center, Muskogee, Oklahoma, in February, 1986, with the chief complaint of left ankle pain. He had been evaluated for the same problem several months earlier at the VA outpatient clinic at Ft. Myers, Florida. A radiograph of the left ankle taken at that time showed a diffuse distribution of radio-opaque material in the region of the mid-foot. Blood lead measurements at that time on two separate occasions revealed lead concentrations of 66 mcg/dl and 79 mcg/dl (normal, 0-40 mcg/dl). The cause of the elevated blood levels was not described during that evaluation.

After the patient presented to our medical center, we pursued the cause for his left ankle pain, the reason for the radio-opacities in his left foot, and the source of his elevated blood lead levels. His occupational history revealed that he had worked as a commercial painter for about ten years, but there was no evidence that he had worked with lead-based paints. His past medical history revealed an accidental gunshot wound to the left foot seven years earlier. A .22 caliber long bullet (mass of 40 grains or 2592 mg) entered the left foot just below the medial malleolus and travelled anteriorly and laterally. No exit wound was evident. The radiograph of the foot made at the time of the accident (1979) confirmed that the bullet had lodged close to the joint space between the talus and calcaneus. No bony destruction was seen (Fig 1a). The bullet was not removed for uncertain reasons, and the patient was lost to follow-up until only recently.

Over a three-month-period from the time of the patient's initial presentation to our medical center,

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Fig 1a. Radiograph of left foot made in July, 1979, immediately after an accidental gunshot wound. The arrow points to the discrete metallic density of a .22 caliber long bullet.

Fig 1B. Radiograph of left foot made February, 1986, nearly seven years after the incident. The arrows define the dispersed metallic "cloud" emanating from the site of the original lead projectile which is no longer evident.

additional blood and urine studies were obtained in order to confirm and to quantitate the degree of the elevated lead burden suggested by previous studies. A radiograph of the left foot (Fig 1b) confirmed the diffuse distribution of radio-opaque material described several months earlier at the Ft. Myers clinic. This material, we believe, represented the dispersion of the original lead bullet as a result of the chemical action of the synovial fluid and the mechanical action of the joint on the bullet fragment. Repeatedly elevated blood and urine lead levels together with markedly elevated blood (erythrocyte) protoporphyrin levels suggested chronic exposure to a source of lead. The increased urinary excretion of lead following the intramuscular administration of one gram EDTA confirmed the presence of an increased lead burden[4] (Table 1). We concluded that the source of the lead exposure in this patient was the dispersed bullet fragment in the joint spaces of the foot, and we consulted an orthopedic surgeon for its removal.

In April, 1986 the patient underwent synovectomy and debridement of the left talocalcaneal and talonavicular joints with the removal of cartilage of "an unusual dark grayish color." Cartilage, synovium and the contents of the debrided joint were submitted to the Armed Forces Institute of Pathology (AFIP) for x-ray diffraction analysis and electron microscopy. The diagnosis made by AFIP was fibrosis and foreign body granuloma due to metallic lead fragments encrusted with lead carbonate hydroxide. We were unable to quantitate the amount of lead removed by the surgical debridement procedure.

Post-operative follow-up of this patient was complicated by his reluctance to be seen in clinic on a regular basis. He did respond to several requests to be followed up in orthopedic clinic and blood lead and protoporphyrin measurements were made at those times. He refused to have further parenteral EDTA therapy. We considered using oral penicillamine in this patient, but because of his inconsistent response to scheduled clinic visits and in view of the potential toxicity of the drug, we thought it prudent not to initiate therapy with this drug in this patient.

Over a period of six months after the surgical debridement of his foot, four follow-up blood samples were obtained for lead and protoporphyrin levels (Table 1). The patient has refused to return for further testing. Figure 2 shows the blood levels of lead, zinc protoporphyrin (ZPP) and free erythrocyte protoporphyrin (FEP) before the debridement procedure and the changes in those levels over the 182 days following removal of most of the lead deposit.

Discussion

Chronic lead intoxication comprises an array of manifestations ranging from subtle sub-clinical biochemical abnormalities to the clinically expressed multi-system derangements commonly attributed to lead poisoning.[1,5] Although the most commonly reported cases of lead intoxication are associated with occupational exposure to lead or to the inadver-

Table 1. Blood and Urine Lead Concentrations and Porphyrin Metabolic Abnormalities Associated with Increased Lead Absorption

Biochemical Test	Normal Range	Days† −205 Date 10-7-85	−152 11-29-85	−146 12-5-85	−143 12-8-85	−111 1-10-86	−93 1-28-86	−54 3-7-86	−1 4-29-86	+1 5-1-86	+42 6-11-86	+89 7-28-86	+126 9-3-86	+182 10-29-86
Lead, blood	0-40 mcg/dl	66	79			57		70		60	56	65	60	51
Zinc protoporphyrin, blood	0-5.6 mcg/gm Hb							15.2		17.0	13.2	7.7	6.9	5.5
Zinc protoporphyrin, blood	0-56 mcg/dl							240.2		245.7	193.2	130.9	115.9	100.7
Free erythrocyte protoporphyrin, blood	0-50 mcg/dl							216.1		221.2	173.9	117.8	104.3	90.6
Lead, urine	0-80 mcg/dl			79	65		110		148*					
Lead, urine	0-80 mcg/24 hr			130	133		292		511*					
Coproporphyrin III, urine	5-77 mcg/24 hr				446									

*24 hour excretion after one gram EDTA i.m.
†Days before (−) and after (+) the surgical debridement procedure on 4-30-86

tent ingestion of lead-containing materials, there have been instances recorded over the years in which the cause of the lead poisoning was an endogenous deposit of lead from retained shot or lead bullet fragments.

Machle, in 1940, reported two cases of lead poisoning detected five and seven years after his patients had sustained gunshot wounds from which the bullets were never extracted.[6] In his review of the topic, Machle found forty other reported cases of plumbism following gunshot wounds. Interestingly all but one of those cases were reported in the European literature. A solitary report prior to 1940 was from the United States.[7] The conclusion reached by Machle after review of these cases was that bullets lodged in tissues, particularly within joint spaces, can be the source of increased lead absorption and lead poisoning.

Over the next decade, several additional reports of lead intoxication associated with retained bullets appeared in the American literature.[8-11] Most notable among those is a review by Senturia, who observed that lead projectiles lodged in bone adjacent to an active joint undergo a characteristic change in their radiographic appearance over time.[8] Initially, such bullet fragments appear discrete and well defined. Presumably a result of the mechanical action of the joint, the larger fragments are disintegrated and the metallic particles are dispersed throughout the joint space, ultimately infiltrating the surrounding tissues. When this has occurred, the radiographic appearance is that of a homogenous metallic diffusion with infiltration of the dispersed lead into the tissues along fascial planes. According to Senturia, when such a radiographic appearance is noted, an increased absorption of lead with resulting lead poisoning is likely.

Within the last ten years, several more case reports have appeared in the literature confirming the impression that lead bullets or fragments lodged within joints are not innocuous and, if left undisturbed, may result in lead poisoning years after the original incident.[2,3,12-17]

According to current standards, excessive lead absorption is reflected by a concentration of lead in whole blood of 25 mcg/dl or greater. Lead intoxication or poisoning is defined as an elevated blood lead level and an erythrocyte protoporphyrin level in whole blood of 35 mcg/dl or greater.[18]

One of the earliest metabolic disturbances as-

sociated with increased exposure to lead is a disruption in the synthesis of heme. Lead inhibits three enzymes in the heme biosynthetic pathway, one of which is ferrochelatase (heme synthetase), the enzyme that promotes the incorporation of iron into protoporphyrin IX to form heme. When ferrochelatase activity is diminished, free erythrocytic protoporphyrins (FEP) accumulate within the red cell (or as the chelation complex zinc protoporphyrin, ZPP) bond to hemoglobin at the heme binding site.[19,20] Consequently, several studies have confirmed the relationships between blood lead levels and FEP or ZPP in workers exposed to lead or in patients with chronic lead intoxication.[21,22]

Nonetheless, there is still controversy about how well FEP or ZPP levels represent the true status of lead poisoning or lead burden, particularly during those transient conditions of new exposure to, or removal from, a source of lead contamination.[19,23] For example, in our patient, removal of the lead deposit in the foot by surgical debridement was followed by a marked decrease in FEP and ZPP levels, whereas blood lead concentrations were only modestly reduced. This apparent discrepancy has also been noted previously in lead workers treated for lead intoxication.[19] Why the decrease in ZPP or FEP levels should precede the decrease in lead levels in these cases is not known, but it is evident that there is considerable yet to be learned about lead elimination kinetics and FEP and ZPP clearances following lead exposures.[24,25]

In general, our review of the reports of clinical cases describing patients harboring retained lead projectiles has revealed a number of common considerations. The following observations and generalizations have been compiled from the literature and summarize the current beliefs regarding the disposition and effects of lead in critical areas of the body:

1. Lead projectiles (bullets, fragments, shot) lodged within joint spaces are not physiologically inert and every attempt should be made to remove them soon after the incident.

2. If left undisturbed, lead fragments within joint spaces disintegrate to smaller particles through the mechanical action of the joint and the dissolving properties of the synovial fluid.[26]

3. Although the dispersion of lead particles throughout the joint space is principally mechanical, soluble lead compounds may be absorbed by the synovial tissues thereby facilitating the extra-articular dispersion of the lead.[27]

4. The radiographic appearance of bullets lodged within joints reflects the altered physico-chemical properties of the lead fragments with time. Initially, the lead fragment appears discrete and well defined. As the dispersion of lead particles occurs within the joint, the radiograph may appear as an arthrogram. With continued dispersion of the lead particles and infiltration of peri-articular structures, the radiograph appears as an amorphous cloud of metallic density surrounding the affected joint space.[8] This density we now know is composed of elemental lead particles and lead carbonate hydroxide crystals.

5. As the dispersion of lead increases with time, so too does the surface area of lead available for absorption. Under such conditions, increased lead absorption leading to elevated blood levels is likely. Eventually, the accelerated rate of lead absorption

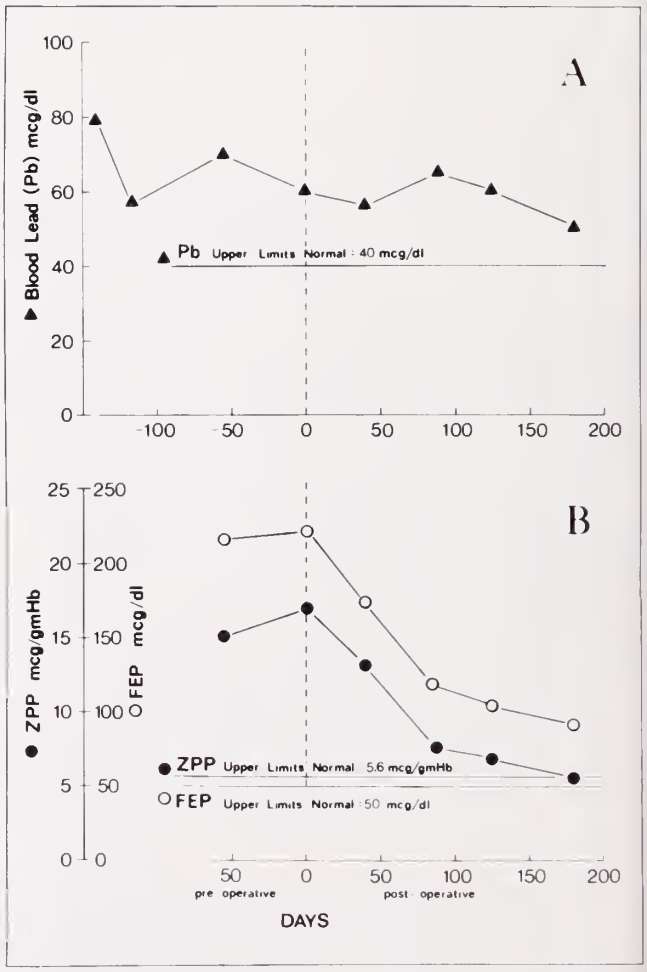

Fig 2. Blood lead levels (Panel A) before and following synovectomy and surgical debridement of left mid-foot (Day 0). Panel B shows the corresponding changes in the erythrocytic protoporphyrin components (ZPP, FEP) over the same time period.

will be followed by the biochemical and clinical manifestations of lead poisoning.

6. Elevated blood lead concentrations together with elevated levels of erythrocyte protoporphyrins (FEP, ZPP) constitute evidence of lead intoxication and disruption of the biosynthesis of heme.

7. Treatment of patients with intra-articular deposits of lead should involve surgical debridement and removal of as much of the lead deposit as possible. Patients who continue to have persistently elevated blood lead and erythrocyte protoporphyrin levels and are clinically symptomatic will require additional treatment.[5]

Summary

A young man was found to have elevated blood lead and erythrocyte protoporphyrin levels seven years after he had been shot in the foot with a .22 caliber bullet. Although clearly evident in radiographs obtained at the time of the accident, the bullet had never been removed. Over the course of the intervening years the radiographic appearance of the projectile changed dramatically. The patient underwent a surgical debridement procedure with some resolution of his lead intoxication. This case was reviewed in the context of the literature describing the disposition of retained lead projectiles. Lead bullets or fragments lodged within joints are slowly disintegrated and, as absorption accelerates, predispose the patient to the risk of lead poisoning which may occur many years after the original incident. Prompt removal of any lead projectile entering a joint space is strongly recommended.

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The Path of Giants: Reflections on Teaching Clinical Medicine

W. O. Smith, MD

In this technologic era of medicine, the teaching of clinical examination is still of paramount importance and must not be neglected.

"The primacy of the history and physical examination in clinical medicine cannot be challenged. No amount of laboratory studies or consulting opinions can cover up deficiencies in either."[1]

Current science fiction novels and movies portray an interesting vision of future medicine. The patient is exposed to some kind of light beam; the immediate diagnosis is flashed onto a computer screen and pills are automatically dispensed. Until we achieve this utopian, unlikely diagnostic technology the basic skills of clinical examination remain the mainstay of medical practice. Those of us fortunate enough to experience the course of medicine during the last half a century have witnessed remarkable progress in the diagnosis and treatment of disease. We have also beheld considerable changes in the techniques of medical education. Some of these changes have proved to be of great value, as for example, the development of new audio-visual aid techniques. On the other hand there has generally been a de-emphasis of bedside, tutorial teaching of the clinical examination.

Some of us received our medical education toward the end of what might be termed the "traditional" period, and walked behind some of the giants of medicine — the Middletons, Castles, Steads — you had your own. From them we learned how to acquire diagnostic information at the bedside, particularly by physical examination, and how to use this information in seeking further clarification from the clinical and radiologic laboratories as required. Is this path of the giants still the main thoroughfare for medical education or have technological advances relegated it to a backroad status? The late Merrill Sossman, a renowned radiologist, facetiously hung a stethoscope on his office wall with the caption: "This is an outmoded instrument."

Is clinical examination indeed an outmoded custom? I think not. I believe it is now more important than ever. It is certainly true that one can recognize an enlarged spleen by scanning techniques at a cost of hundreds of dollars, but it is also true that the skilled clinician can identify splenomegaly at the bedside in a moment with no additional expense to the patient. No doubt a portion of the high cost of medical care is due to the substitution of bedside examination by expensive laboratory studies.

These remarks should not be interpreted as decrying the use of laboratory and radiologic techniques. They are obviously tremendously useful, even essential at times. Certainly the functional status of a stenotic aortic valve cannot be assayed by hearing the murmur. But I affirm that the murmur must first be identified before further enlightenment can follow.

I think many physicians share my belief that the clinical examination is the fun part of medicine. Yet,

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The skilled physician can identify splenomegaly at the bedside in a moment with no additional expense to the patient.

as currently taught, many medical students and house officers consider this exercise as dull but necessary drudgery. How can this be? I submit that these skills are often not taught to them with excitement and in a fun way by course instructors and teaching attendings, who, themselves, may miss the real enjoyment of bedside medicine. The giants made it exciting!

My concern about the adequacy of our bedside teaching of the basics, particularly in regard to physical examination, comes not only from experience with the current generation of medical students and house staff, but also from serving as an examiner for the American Board of Internal Medicine when oral examinations comprised part of the competency evaluation. I was astonished to discover that some physicians qualified to stand the board examination did not properly:

1. Feel for epitrochlear nodes.
2. Feel for the spleen.
3. Measure liver size.
4. Interpret breath sounds.
5. Interpret heart sounds.

Dr Robert Ebert, former dean of Harvard Medical School, writes: "It is shocking to discover how many candidates for the American Board of Internal Medicine are turned down, not because they have forgotten some esoteric medical fact but because they fail in the fundamentals of history taking and physical examination."[2]

A recent survey of internists in private practice concerning the adequacy of their house staff training revealed that these physicians believed that greater importance and emphasis should be placed on continuing education in "basic skills" (including history taking and physical examination.)[3]

How can we as clinical teachers respond to these problems? One must ask the question why bedside, tutorial teaching of clinical diagnosis is not currently being given appropriate emphasis by present day teaching physicians? One clue may have been voiced by Gibbons, who writes: "So often physicians are intimidated by their perceived lack of 'facts' as they approach their attending month, failing to recognize that it is the 'skill' that they possess that can most influence and instruct the trainee in really caring for patients."[4] The word "experience" might be added to skill in this evaluation.

There are, of course, problems in the tutorial method of teaching. Having served as coordinator of the course entitled "Introduction to Clinical Medicine," the course devoted to the teaching of history taking and physical examination to sophomore medical students, I am all too aware of the variability of experience of the medical students depending upon the interest, time availability, and skills of a clinical instructor. Unfortunately many physicians appear to believe that simply being a physician endows them with the magic of being good teachers. This is a totally false premise. It is true that some physicians seem to be natural teachers, perhaps a genetic gift. However, most physicians have to work to acquire the art of teaching.

What are the attributes of a good clinical teacher? I do not propose that it is necessary for a clinician to have a degree in education or even to have had any formal courses in education, although a short seminar in teaching techniques would likely be helpful for all of us. To me the secrets of being a good clinical teacher are fairly simple:

1. The teacher must perforce be a master of clinical skills.
2. He/she must maintain a high level of genuine interest and excitement and be able to communicate these to the students.

To accept anything as commonplace or not interesting is a mistake. Students often say to me: "I don't have an interesting patient to present to you." My response to them is that I have never seen a patient who did not interest me. There is always something that can be learned from a patient regardless of the character of his/her illness.

Another important concept in medical education is that termed by Dickinson Richards as the "art of simplification."[5] Richards defines this as the ability

There is always something that can be learned from a patient regardless of the character of his/her illness.

of the clinician to distinguish what is essential in a mass of data. As a corollary the gifted clinical teacher attempts to simplify clinical information according to the stage of sophistication of the learner. The beginning student in physical examination must learn to distinguish the first and second heart sounds before recognition of an S4 can occur. Electrocardiography should be approached differently with the medical student and the cardiology fellow. Oversimplification is to be avoided, but the forest-versus-trees principle must be remembered.

I should like to highlight a problem which exists both in medical education and the practice of medicine with respect to the acquisition of clinical data. This problem was addressed as "the undesirable patient" in an editorial some 28 years ago.[6] The "undesirable patient" was defined generally as a patient whom the physician finds unpleasant to deal with because of the patient's social situation, attitude toward the physician, nature of the illness, or is seen under circumstances inconvenient to the physician. I would enlarge upon the influence of the nature of the illness by citing examples of what could be termed "undesirable illness." The best current example of this sort of illness is, of course, AIDS. But many others abound — nervous system disorders, mental disorders, certain skin diseases, congenital defects, other venereal diseases, tuberculosis, alcoholism, drug addiction, and even cancer. These are but a few examples. Undesirable patients or patients with undesirable illnesses do not always receive the best of clinical examinations by students or house staff. This may be at a completely subconscious level of the trainee. I believe the teaching physicians must always be aware of this phenomenon, recognize it and bring it to the attention of their students.

On the positive side I believe that the Department of Medicine here has greatly improved bedside teaching. Much credit is owed to the attitude of the current chairman, Dr Patrick McKee. Competency in the clinical skills by our medical students and house staff is one of his major goals. The sophomore course directed to teaching these skills has been markedly strengthened and its importance emphasized to the faculty. Bedside teaching of clinical skills during rounds is now being highlighted. I am delighted to see this "back to the basics" approach.

It is important to return to the path of the "greats" in teaching this generation of students — particularly if, as someone has said, the lights should go out and the monies dry up.

I should like to close this piece with the words of Francis Peabody, one of our great medical teachers, who wrote in 1927: "It is probably fortunate that systems of education are constantly under the fire of general criticism, for if education were left solely in the hands of teachers the chances are good that it would soon deteriorate. Medical education, however, is less likely to suffer from such stagnation, for whenever the lay public stops criticizing the type of modern doctor, the medical profession itself may be counted on to stir up the stagnant pool and cleanse it of its sedimentary deposit."[7]

Acknowledgment

The author wishes to express his appreciation to Dr David C. Mock for his critical review and helpful suggestions.

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The Author

William O. Smith, MD, FACP, is a professor of medicine at the University of Oklahoma Health Sciences Center, Oklahoma City. Board certified in internal medicine, he is a 1949 graduate of Harvard Medical School.

News from
the Oklahoma State
Department of Health

Cervical Cancer Surveillance

The Chronic Disease Service of the Oklahoma State Department of Health was selected as the only site nationally to implement a statewide, population-based cervical cancer surveillance and follow-up system to address the incidence and prevalence of Class III and greater Pap smears. A Class III Pap smear is defined as cervical intraepithelial neoplasia II. The three-year grant was awarded by the Centers for Disease Control.

The project will develop intervention strategies to address the barriers which inhibit women from obtaining a Pap smear or the appropriate follow-up of an abnormal Pap smear. The project will also address linking a screening surveillance system with a cancer surveillance system.

The first year will involve expanding the health department's present cervical cancer and dysplasia surveillance and follow-up system to incorporate population-based elements. The expansion will include Oklahoma laboratories that perform Pap smear analysis. The presence of cervical intra-epithelial neoplasia II and III, cervical cancer in-situ, and invasive cancer will be confirmed by review of histological reports of cervical and endocervical biopsies.

In the second year of the project, women will be interviewed to ascertain risk factors, preventive health practices and barriers to health care. From these interviews, interventions will be designed and implemented to address the problems. Physicians will be contacted to validate abnormal Pap smears and preventive health behaviors. Assistance will also be offered to physicians to help find women who are not compliant in follow-up. The third year will include further implementation and evaluation.

Questions concerning this project can be directed to the Chronic Disease Service, Oklahoma State Department of Health, 405/271-4072.

DISEASE	November 1988	TOTAL TO DATE		
		This Year	Last Year	5 Yr. Avg.
AMEBIASIS	1	5	8	10
CAMPYLOBACTER INFECTIONS	11	192	242	231
ENCEPHALITIS, INFECTIOUS	4	8	24	25
GIARDIA INFECTIONS	17	210	196	259
GONORRHEA (Use ODH Form 228)	499	6837	9098	11,783
HAEMOPHILUS INFLUENZAE INVASIVE DISEASE	20	181	192	189
HEPATITIS A	32	478	286	448
HEPATITIS B	16	168	234	220
HEPATITIS, NON-A NON-B	2	42	46	53
HEPATITIS UNSPECIFIED	4	27	36	90
MEASLES (RUBEOLA)	0	8	4	11
MENINGITIS, ASEPTIC	12	75	153	177
MENINGITIS, BACTERIAL (non-meningococcal, non H. Influenzae)	2	15	31	51
MENINGOCOCCAL INFECTIONS	1	19	26	28
PERTUSSIS	1	63	162	210
RABIES (Animal)	1	33	34	80
ROCKY MOUNTAIN SPOTTED FEVER	7	90	83	122
RUBELLA	0	1	5	1
SALMONELLA INFECTIONS	30	431	432	448
SHIGELLA INFECTIONS	24	200	149	206
SYPHILIS (Use ODH Form 228)	7	143	170	179
TETANUS	0	1	1	4
TUBERCULOSIS	12	221	230	229
TULAREMIA	1	16	26	21
TYPHOID FEVER	0	0	4	3
MUMPS				

Diseases of Low Frequency	Total to Date This Year
ACQUIRED IMMUNE DEFICIENCY SYNDROME	139
BRUCELLOSIS	2
LEGIONNAIRES' DISEASE	15
MALARIA	11
REYE SYNDROME	0
TOXIC SHOCK SYNDROME	9

Native son returns

Edward Brandt to assume dean's post at OU College of Medicine

Edward N. Brandt, MD, an Oklahoma native and former associate dean of the University of Oklahoma College of Medicine, will assume the position of dean of the college on May 1, 1989.

Currently the president of the University of Maryland at Baltimore, Dr Brandt was named to his new post by the OU regents at their December meeting. He was selected by a 12-member search committee chaired by Dr Gordon Deckert, professor in the Department of Psychiatry and Behavioral Sciences. Dr Brandt will succeed Dr Donald Kassebaum, who resigned last July. Dr G. Rainey Williams has been serving as interim dean.

Dr Brandt earned as BS degree in mathematics from OU in 1954 and an MS degree in mathematics from Oklahoma State University in 1955. He received his MD degree from OU in 1960 and a PhD degree in biostatistics from OU in 1963. He also holds three honorary doctoral degrees.

Dr Brandt has held several academic and administrative positions at the university. He was a professor and chairman of the Department of Biostatistics and Epidemiology in the OU School of Health in 1967 and 1968, and professor in the Department of Preventive Medicine and associate professor of medicine in the OU School of Medicine from 1967 to 1970.

Dr Brandt also served as director of the OU Medical Research Computer Center from 1962 to 1965, director of the Biostatistical Unit from 1962 to 1967, director of Computer Operations from 1965 to 1968, assistant to the vice president for medical affairs in 1967 and 1968, and associate director of the Medical Center and associate dean of the School of Medicine from 1968 to 1970.

He served as vice chancellor for health affairs in the University of Texas System Administration in Austin from 1977 to 1981. Dr Brandt was also acting surgeon general, US Public Health Service, for eight months in 1981, before being elevated to the post of Assistant Secretary that year.

CALL FOR RESOLUTIONS

All resolutions to be presented to the Oklahoma State Medical Association House of Delegates Annual Meeting must be received in the executive offices no later than thirty (30) days prior to the meeting. This year's meeting will be held May 4-6, 1989, at the Sheraton-Kensington Hotel, Tulsa, Oklahoma.

County medical societies or individuals wishing to submit resolutions should mail them to OSMA, 601 Northwest Expressway, Oklahoma City, OK 73118. Should you need assistance in drafting such resolutions, please contact the executive offices.

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Medicine Day makes March 8 a red-letter day at the capitol

The third annual Medicine Day at the State Capitol, a project sponsored jointly by the Oklahoma State Medical Association and the OSMA Auxiliary, will be Wednesday, March 8, 1989.

With the spotlight on medicine, Oklahoma's doctors and friends of medicine will meet their lawmakers face to face in an exchange of medical and legislative expertise. Physicians, physician spouses, office staff members, nurses, community leaders, and other interested individuals are encouraged to take advantage of this once-a-year opportunity.

Activities will begin at 9:00 AM, with registration in the capitol rotunda, and end at 2:00 PM. The busy schedule includes time to meet with legislators, special tours, lunch, and some exciting guest speakers, including keynoter Jerald R. Schenken, MD, Omaha, Neb. Dr Schenken, a member of the AMA Board of Trustees, was narrowly defeated last year in his first bid for a seat in the US Congress.

IN MEMORIAM

1988

Charles Stewart Cunningham, MD	January 1
Charles Wallace Coyner, MD	January 4
Glen Franklin Wade, MD	January 12
Newman Sanford Matthews, MD	January 12
Frank Cornwell Lattimore, MD	January 30
Leo Lowbeer, MD	February 3
Joseph Norman Kramer, MD	February 16
Eugene Richard Flock, MD	February 17
Jay P. Irby, MD	February 25
James William Finch, MD	March 4
John Junior Donnell, MD	March 7
Douglas Earl Wilson, MD	March 29
Tony Willard Pratt, MD	April 21
James Park Dewar, Jr., MD	May 5
Hugh Albert Stout, MD	May 7
William Claude McCurdy, Jr., MD	May 22
James Robert Carroll, MD	May 28
Dean Crittenden Walker, MD	June 11
Vernon Dean Cushing, MD	June 19
James Breese Darrough, MD	June 29
Paul Thurston Powell, MD	July 1
Jack Burgess Tolbert, MD	July 12
John Ralph Rafter, MD	August 1
Luther Harrison Becker, MD	August 9
Clemens Maximilian Hartig, MD	August 27
John Copeland Pickard, MD	August 31
Peter A. MacKercher, MD	September 17
Haskell Smith, MD	September 27
William Eldon Wendel, MD	October 5
Tullos Oswell Coston, MD	October 21
Frank Herbert Austin, MD	November 11

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From family physician in Madill: Another modest proposal

To the Editor: And yet another insurance proposal crosses my desk.

I grow weary of trying to read between the lines, to get to the gist of the proposal. Cost containment once again is used as the motivating factor.

I am tired of fighting. Let me sign . . . let me sign.

It is odd that I would be included in the select few to whom this proposal is offered. What insurance company in its right mind would offer assistance to a rural physician? Why would they need to buy me or cost control me?

My fees are already rock bottom, motivated by a poor economy and a feeling that it is wrong to charge more than what the buyer can pay.

Seems I learned this in an economics class while in college, in a time when being poor was something that this nation was going to change.

The government has also helped keep my fees low. They feel my skills are worth much less than my colleagues thirty miles down the road. Alas, I have been duped into having the wrong zip code and therefore the wrong Medicare "profile." I wonder if getting a mailing address in the right zip code would improve my skills or at least their value to the Medicare carrier.

You see, my practice is not sophisticated enough to understand the reality of charging one fee for the non-insured, another for Medicare, and yet another for the insurance company.

I have mistakenly cultivated my patients to believe that my relationship is with them and not their third-party carrier.

This proposal sits in front of me, you know the type, code named with some contagious Madison Avenue title. It truly lives up to its abbreviated name . . . the PPO. And to think that I could be a Preferred Provider.

I have complained bitterly about how the government and insurance companies do not understand and are making no effort to comprehend how rural health care differs from the big city health industry.

I then had a moment of sheer insight . . . what if I were to propose a way to get around all this? I would propose the OPP's system.

Rather than send rural insureds/clients/patients to the medically intensive city, it would be much

(continued)

more appropriate to send the big city insureds/clients/patients to the rural community.

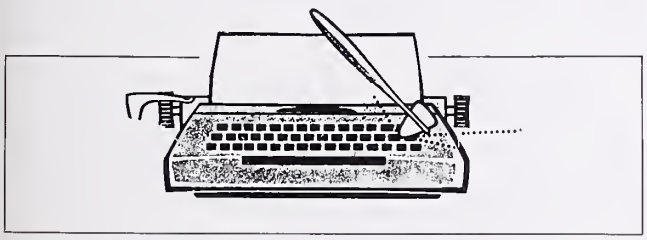
The PPO backwards, or OPP.

Just think of the benefits!

1. Patients get to visit rural settings, away from the hubbub of city life.
2. Care can be given in smaller, more people-oriented hospitals.
3. Patients could have a single physician to identify as "their doctor" (none of the 4 to 5 sub-specialist merry-go-round).
4. Small hospitals couldn't afford DRG reviewers and would never dream of discharging the patient as unable to meet intensity of service criteria.
5. Think of the money to be saved:
   *None of those High Technology expenses
   *Medical judgments made on clinical exams
   *No hidden hospital costs to cover marketing expenses

Maybe there would be other benefits. Take for instance a rural state which can't recruit physicians to rural settings. With the OPP's program there would be plenty of work to make up for the fact that Medicare compensation is 30% less than what is compensated in the metropolitan area.

Maybe rural hospitals could improve their equipment and physical plants with the influx of health care dollars from insureds/clients/patients and local purchases from their families, which surely would



come visit. Failing rural hospitals could once again become productive and profitable (who knows, maybe even for-profit chains would be interested).

Why not, then, dream up a system where insureds are shipped to rural America for health care.

It makes about as much sense as having someone drive 150 miles for the same care or service that is available five blocks from their home.

But alas, it's all the rage this season.

—J.M. Pontious, MD
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A Slot Machine, A Broken Test Tube. An Autobiography. By S.E. Luria. New York, etc: Harper & Row, Publishers, 1984. Pp 228, $17.95.

Salvatore E. Luria was born in 1912 in Turin, the capital of Italian Piedmont. He received the MD from the University of Turin in 1935. In 1938 he fled Italy for Paris to avoid Mussolini's anti-Semitic policies, and in June, 1940, he left Paris to escape from the advancing German armies. In September, 1940, Luria came to the United States.

Before departing Italy, Luria was introduced to the concept of bacteriophages, the viruses that attack bacteria, through the papers of Max Delbruck.

The title of his autobiography, *A Slot Machine, A Broken Test Tube,* refers to the unanticipated events in his scientific career which led to his major discoveries in genetics. His work was a major contribution to the development of molecular biology. Luria shared the Nobel prize in medicine and physiology with Max Delbruck and Alfred Hershey for their research contributions concerning bacteriophage. Luria's research career led him to Columbia University, Vanderbilt University, Indiana University, the University of Illinois, and the Massachusetts Institute of Technology, where he is director of the Center for Cancer Research.

The book is written in an interesting style, is easily read, and is a lively account of Luria's life and career. Liberally spiced with his humor as well as his strongly liberal philosophy, it provides strong opinions on a variety of subjects including university communities, religion, the environment, the Vietnam War, psychotherapy, philosophy, and art.

This book makes for interesting reading about an important scientist.

—Harris D. Riley, Jr., MD
Oklahoma City

Campaigning with Crook. By Captain Charles King, USA, with an introduction by Don Russell. Norman: University of Oklahoma Press, 1983. Pp 163, paperback, $4.95.

The disastrous battle on the Little Big Horn, which resulted in the annihilation of General George Custer and five of his companies of the Seventh Cavalry by Sioux Indians, occurred on June 25, 1876. The Fifth Cavalry, commanded by General George Crook, was notified at its station at Fort Hays, Kansas, of the massacre. The adjutant was First Lieutenant Charles King, the author of this book.

King's story begins with the departure of the Fifth Cavalry from Fort Hays and traces the movement of that regiment in pursuit of the enemy to Fort Laramie, to the famous skirmish on War Bonnet Creek, and then through the long march to the headquarters of Crook's Big Horn and Yellowstone expedition at Goose Creek, Montana. He depicts the campaign through the eyes of a regimental officer who had a keen interest in topographical detail. With nothing but the clothes they wore, and without supply provisions, the Fifth Cavalry trailed and fought the Sioux war party for two and a half months over almost a thousand miles. King is a good storyteller.

Charles King was an interesting personality. A graduate at West Point, he served in various army posts. In addition, he played professional baseball with the Cincinnati Red Stockings, later was on the faculty at West Point and at the University of Wisconsin, and was a military instructor at several military academies. In addition, he wrote 69 books and, when he died in 1933, had accumulated 70 years of military service.

This book, which originally appeared in 1880, has been reprinted both in cloth and in paperback. It is volume 25 in *The Western Frontier Library.* It represents an interesting chapter in the Indian wars.

—Harris D. Riley, Jr., MD
Oklahoma City

V-Mail: Letters of a World War II Combat Medic (PFC. Keith Winston). Edited by Sarah Winston. Chapel Hill, NC: Algonquin Books, 1985. Pp 310, illus $14.95.

On March 25, 1944, Keith Winston of Pennsylvania was drafted into the US Army at age 32 years. After infantry basic training, he was assigned to the 100th Infantry Division and to its battalion headquarters, 398th Infantry Regiment, Medical Detach-

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ment. On October 5, 1944, Winston's division shipped out for the Mediterranean theater and on October 20 landed at Marseille, France.

Winston, the father of two and a devoted husband and father, had been an insurance underwriter and a freelance writer-editor in civilian life. He was a faithful letter writer, and his wife preserved all of his letters. It would appear that, when conditions permitted, he wrote daily to his wife. The letters portray the story of his role as a combat medic as his division invaded France's southern coast and progressed through the French continent into Germany. Seven months after his induction, in the Vosges Mountains of France, he was wounded by an exploding mine. His letters are well written and informative, although he attempted to shield his wife from dangers to which he was exposed.

The letters give a vivid scenario of the day-to-day activities of combat troops. They contain relatively little relating to medicine and medical care. They are filled with events and stories of the European theater and tell of the maturation of a lonely recruit into a confident combat medic who was decorated with the Bronze Star and Purple Heart. John S.D. Eisenhower provides a pertinent introduction to the book.

Following his military service, Winston returned to insurance work. He also free-lanced as a photojournalist. He died at the age of 57 on March 20, 1970, after three months of a "grossly misdiagnosed illness," according to his wife.

This is a very readable journal of an enlisted man in the European theater of World War II.

—Harris D. Riley, Jr., MD
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(continued on next page)

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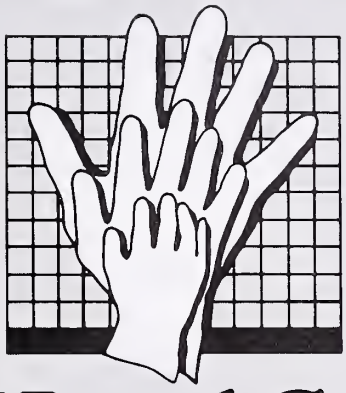

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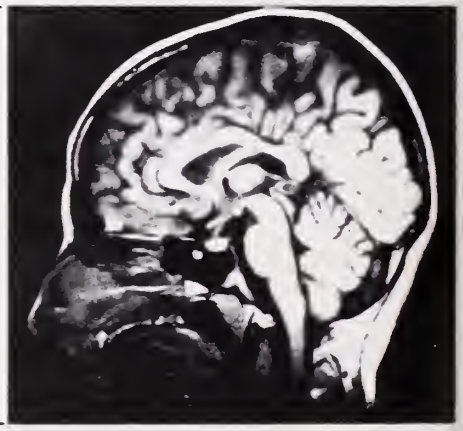

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In the 35 years since its inception, the American Medical Association Education and Research Foundation (AMA-ERF) has consistently supported quality medical education in the United States. This is currently made possible through several funds. The Medical School Excellence Fund provides grants to medical schools throughout the nation to use as they see fit. This is the oldest and largest of the funds. At Oklahoma's three medical schools funds are used in various ways such as books for their medical libraries, computers, speakers for student programs, and equipment for teaching and for student research. The newest fund (1983), the Medical Student Assistance Fund, provides funds for medical schools to use in direct financial assistance to students. Medical school deans make these gifts available to students as long-term loans at very low interest rates and with longer pay-back time.

The Development Fund is used at the discretion of the AMA-ERF Board of Directors to support pilot and experimental health and medical programs. Categorical Funds for specific research areas are also available. Our endeavors help complete the never-ending cycle of education: giving, receiving, and giving back.

Contributions to AMA-ERF in 1987-88 now equal over $3,000,000.00. These gifts resulted from efforts of both AMA Auxiliary and the Foundation. The funds provided to each school are determined by the donors, including 50,000 physicians who designate beneficiary schools.

Raising funds for AMA-ERF has been the AMA Auxiliary's sole national philanthropic endeavor for more than 30 years. The holiday sharing card project is the easiest and most successful fund-raiser that auxiliaries can implement. Some counties have expanded the theme and are having Thanksgiving, Valentine, and Doctor's Day sharing cards. Also, some counties and states send sharing cards to legislators, medical school deans, and hospital administrators. Other fund-raising projects include tennis parties, garage sales, costume parties, football parties, cooking classes, art sales, an international dinner-dance, and a country hoedown. AMA-ERF receives 40-50% sales commission on all Christmas card sales.

Donations given in the form of memorials, thank-you's, and physician courtesy cards are unique ways for medical society members to remember family, friends, or colleagues, or to honor someone for a task well done.

We want to enhance the AMA's goal this year to improve the image of the medical family, by demonstrating how contributing to AMA-ERF places physicians and their families in a positive light within the community. To attain these goals, we need to start now! Be generous in your donations to this charitable cause. Your entire donation is tax deductible, and you may designate the particular school you wish to receive your donation. The extraordinary fund-raising efforts of the AMA Auxiliary and the generosity of contributing medical families have secured AMA-ERF's past effectiveness and assure its future success.

—Karen Mask
OSMAA AMA-ERF Chairman

■ **M. Boyd Shook, MD, Oklahoma City, assumed** the presidency of the Oklahoma County Medical Society (OCMS) at the OCMS Inaugural Dinner Dance on January 14. Site of the festivities was Oklahoma City's Sheraton-Century Hotel. Other OCMS officers for 1989 are William O. Coleman, MD, president-elect; Gary F. Strebel, MD, vice-president; and Jon C. Axton, MD, secretary-treasurer. Directors are Irwin H. Brown, MD; Stephen Cagle, MD; Sara Reed DePersio, MD; James W. Hampton, MD; James M. Hartsuck, MD; William L. Hughes, MD; Carol Blackwell Imes, MD; Clarence Robison, Jr., MD; E.N. Scott Samara, MD; and Ronald H. White, MD.

■ **Gordon H. Deckert, MD, David Ross Boyd** professor of psychiatry and behavioral sciences at the University of Oklahoma Health Sciences Center, has been named to a panel of seven medical educators from across the country to study the medical licensure procedure. The panel was appointed by the National Board of Medical Examiners to review the "Uniform Examination Pathway to Medical Licensure," a new method being proposed for licensing physicians. Panelists will discuss the combination of the two current licensing routes into a single standardized pathway.

■ **Disadvantaged persons age 65 and older who** need medical eye care should be encouraged to call the National Eye Care Project for medical information and treatment. The toll-free Helpline number is 1-800-222-EYES. Eligible callers will be referred to a nearby ophthalmologist who has volunteered to provide care at no out-of-pocket cost to the patient. Ophthalmologists estimate that about half of all blindness suffered by elderly people could be prevented with early diagnosis and treatment, according to project chairman B. Thomas Hutchinson, MD.

■ **The American Medical Association (AMA)** launched American Medical Television, the official electronic voice of organized medicine and the healthcare industry, on January 8. The new programming airs Sundays from 10:00 AM to noon (Eastern Time) on The Discovery Channel. It is aimed at physicians who wish to use current AMA-produced information as part of their Continuing Medical Education efforts. Programs will offer focused, timely information and new perspectives on clinical, ethical, regulatory, and socioeconomic issues of interest and importance to practicing physicians.

■ **The Oklahoma State Medical Association** (OSMA) has presented a gift of $10,000 to the University of Oklahoma to be used to assist pre-med merit scholar students with their educations. The gift will be matched by a gift from the Robert S. and Grayce B. Kerr Foundation for the National Achievement Scholarship Program for Outstanding Negro Students. Dr Ray V. McIntyre, OSMA president, presented the association's check to OU Health Sciences Center officials on December 22. The OSMA hopes to encourage Oklahoma's merit scholars to stay in the state.

■ **A PLICO Loss Prevention Seminar will be** held on Saturday afternoon, May 6, in conjunction with the OSMA Annual Meeting at the Sheraton-Kensington Hotel, Tulsa. PLICO-insured physicians are required to attend one loss prevention seminar every three years. Two specialty societies also have scheduled loss prevention seminars in the coming months. The Radiology Society's program will run from 1:00 PM to 4:00 PM, Saturday, April 8, at Baptist Hospital in Oklahoma City. The Oklahoma Academy of Family Physicians will sponsor a seminar in conjunction with its Annual Meeting on Wednesday, May 31, at Fountainhead Lodge, Lake Eufaula.

■ **Oklahoma physicians who dispense or sell** controlled dangerous substances or drugs to patients must register annually on forms adopted by the Oklahoma State Board of Medical Licensure and Supervision. There is no charge for the registration, which may be combined with the annual renewal of the physician's Oklahoma medical license. Forms may be obtained from the board by calling (405) 848-6841.

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Contraindications: VASOTEC® (Enalapril Maleate, MSD) is contraindicated in patients who are hypersensitive to this product and in patients with a history of angioedema related to previous treatment with an ACE inhibitor.

Warnings: *Angioedema:* Angioedema of the face, extremities, lips, tongue, glottis, and/or larynx has been reported in patients treated with ACE inhibitors, including VASOTEC. In such cases, VASOTEC should be promptly discontinued and the patient carefully observed until the swelling disappears. In instances where swelling has been confined to the face and lips, the condition has generally resolved without treatment, although antihistamines have been useful in relieving symptoms. Angioedema associated with laryngeal edema may be fatal. **Where there is involvement of the tongue, glottis, or larynx likely to cause airway obstruction, appropriate therapy, e.g., subcutaneous epinephrine solution 1:1000 (0.3 mL to 0.5 mL), should be promptly administered.** (See ADVERSE REACTIONS.)

Hypotension: Excessive hypotension is rare in uncomplicated hypertensive patients treated with VASOTEC alone. Heart failure patients given VASOTEC commonly have some reduction in blood pressure, especially with the first dose, but discontinuation of therapy for continuing symptomatic hypotension usually is not necessary when dosing instructions are followed; caution should be observed when initiating therapy. (See DOSAGE AND ADMINISTRATION.) Patients at risk for excessive hypotension, sometimes associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death, include those with the following conditions or characteristics: heart failure, hyponatremia, high-dose diuretic therapy, recent intensive diuresis or increase in diuretic dose, renal dialysis, or severe volume and/or salt depletion of any etiology. It may be advisable to eliminate the diuretic (except in heart failure patients), reduce the diuretic dose, or increase salt intake cautiously before initiating therapy with VASOTEC in patients at risk for excessive hypotension who are able to tolerate such adjustments. (See PRECAUTIONS, *Drug Interactions* and ADVERSE REACTIONS.) In patients at risk for excessive hypotension, therapy should be started under very close medical supervision and such patients should be followed closely for the first two weeks of treatment and whenever the dose of enalapril and/or diuretic is increased. Similar considerations may apply to patients with ischemic heart disease or cardiovascular disease in whom an excessive fall in blood pressure could result in a myocardial infarction or cerebrovascular accident. If excessive hypotension occurs, the patient should be placed in supine position and, if necessary, receive an intravenous infusion of normal saline. A transient hypotensive response is not a contraindication to further doses of VASOTEC, which usually can be given without difficulty once the blood pressure has stabilized. If symptomatic hypotension develops, a dose reduction or discontinuation of VASOTEC or concomitant diuretic may be necessary.

Neutropenia/Agranulocytosis: Another ACE inhibitor, captopril, has been shown to cause agranulocytosis and bone marrow depression, rarely in uncomplicated patients but more frequently in patients with renal impairment, especially if they also have a collagen vascular disease. Available data from clinical trials of enalapril are insufficient to show that enalapril does not cause agranulocytosis at similar rates. Foreign marketing experience has revealed several cases of neutropenia or agranulocytosis in which a causal relationship to enalapril cannot be excluded. Periodic monitoring of white blood cell counts in patients with collagen vascular disease and renal disease should be considered.

Precautions: *General: Impaired Renal Function:* As a consequence of inhibiting the renin-angiotensin-aldosterone system, changes in renal function may be anticipated in susceptible individuals. In patients with severe heart failure whose renal function may depend on the activity of the renin-angiotensin-aldosterone system, treatment with ACE inhibitors, including VASOTEC, may be associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death.

In clinical studies in hypertensive patients with unilateral or bilateral renal artery stenosis, increases in blood urea nitrogen and serum creatinine were observed in 20% of patients. These increases were almost always reversible upon discontinuation of enalapril and/or diuretic therapy. In such patients, renal function should be monitored during the first few weeks of therapy.

Some patients with hypertension or heart failure with no apparent preexisting renal vascular disease have developed increases in blood urea and serum creatinine, usually minor and transient, especially when VASOTEC has been given concomitantly with a diuretic. This is more likely to occur in patients with preexisting renal impairment. Dosage reduction and/or discontinuation of the diuretic and/or VASOTEC may be required.

Evaluation of patients with hypertension or heart failure should always include assessment of renal function. (See DOSAGE AND ADMINISTRATION.)

Hyperkalemia: Elevated serum potassium (> 5.7 mEq/L) was observed in approximately 1% of hypertensive patients in clinical trials. In most cases these were isolated values which resolved despite continued therapy. Hyperkalemia was a cause of discontinuation of therapy in 0.28% of hypertensive patients. In clinical trials in heart failure, hyperkalemia was observed in 3.8% of patients, but was not a cause for discontinuation.

Risk factors for the development of hyperkalemia include renal insufficiency, diabetes mellitus, and the concomitant use of potassium-sparing diuretics, potassium supplements, and/or potassium-containing salt substitutes, which should be used cautiously, if at all, with VASOTEC. (See *Drug Interactions.*)

Surgery/Anesthesia: In patients undergoing major surgery or during anesthesia with agents that produce hypotension, enalapril may block angiotensin II formation secondary to compensatory renin release. If hypotension occurs and is considered to be due to this mechanism, it can be corrected by volume expansion.

Information for Patients:

Angioedema: Angioedema, including laryngeal edema, may occur especially following the first dose of enalapril. Patients should be so advised and told to report immediately any signs or symptoms suggesting angioedema (swelling of face, extremities, eyes, lips, tongue, difficulty in swallowing or breathing) and to take no more drug until they have consulted with the prescribing physician.

Hypotension: Patients should be cautioned to report lightheadedness especially during the first few days of therapy. If actual syncope occurs, the patients should be told to discontinue the drug until they have consulted with the prescribing physician.

All patients should be cautioned that excessive perspiration and dehydration may lead to an excessive fall in blood pressure because of reduction in fluid volume. Other causes of volume depletion such as vomiting or diarrhea may also lead to a fall in blood pressure; patients should be advised to consult with the physician.

Hyperkalemia: Patients should be told not to use salt substitutes containing potassium without consulting their physician.

Neutropenia: Patients should be told to report promptly any indication of infection (e.g., sore throat, fever) which may be a sign of neutropenia.

NOTE: As with many other drugs, certain advice to patients being treated with enalapril is warranted. This information is intended to aid in the safe and effective use of this medication. It is not a disclosure of all possible adverse or intended effects.

Drug Interactions:

Hypotension: Patients on Diuretic Therapy: Patients on diuretics and especially those in whom diuretic therapy was recently instituted may occasionally experience an excessive reduction of blood pressure after initiation of therapy with enalapril. The possibility of hypotensive effects with enalapril can be minimized by either discontinuing the diuretic or increasing the salt intake prior to initiation of treatment with enalapril. If it is necessary to continue the diuretic, provide close medical supervision after the initial dose for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and DOSAGE AND ADMINISTRATION.)

Agents Causing Renin Release: The antihypertensive effect of VASOTEC is augmented by antihypertensive agents that cause renin release (e.g., diuretics).

Other Cardiovascular Agents: VASOTEC has been used concomitantly with beta-adrenergic-blocking agents, methyldopa, nitrates, calcium-blocking agents, hydralazine, prazosin, and digoxin without evidence of clinically significant adverse interactions.

Agents Increasing Serum Potassium: VASOTEC attenuates potassium loss caused by thiazide-type diuretics. Potassium-sparing diuretics (e.g., spironolactone, triamterene, or amiloride), potassium supplements, or potassium-containing salt substitutes may lead to significant increases in serum potassium. Therefore, if concomitant use of these agents is indicated because of demonstrated hypokalemia, they should be used with caution and with frequent monitoring of serum potassium. Potassium-sparing agents should generally not be used in patients with heart failure receiving VASOTEC.

Lithium: A few cases of lithium toxicity have been reported in patients receiving concomitant VASOTEC and lithium and were reversible upon discontinuation of both drugs. Although a causal relationship has not been established, it is recommended that caution be exercised when lithium is used concomitantly with VASOTEC and serum lithium levels should be monitored frequently.

Pregnancy — Category C: There was no fetotoxicity or teratogenicity in rats treated with up to 200 mg/kg/day of enalapril (333 times the maximum human dose). Fetotoxicity, expressed as a decrease in average fetal weight, occurred in rats given 1200 mg/kg/day of enalapril but did not occur when these animals were supplemented with saline. Enalapril was not teratogenic in rabbits. However, maternal and fetal toxicity occurred in some rabbits at doses of 1 mg/kg/day or more. Saline supplementation prevented the maternal and fetal toxicity seen at doses of 3 and 10 mg/kg/day, but not at 30 mg/kg/day (50 times the maximum human dose).

Radioactivity was found to cross the placenta following administration of labeled enalapril to pregnant hamsters.

There are no adequate and well-controlled studies in pregnant women. VASOTEC® (Enalapril Maleate, MSD) should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers: Milk in lactating rats contains radioactivity following administration of ^{14}C enalapril maleate. It is not known whether this drug is secreted in human milk. Because many drugs are secreted in human milk, caution should be exercised when VASOTEC is given to a nursing mother.

Pediatric Use: Safety and effectiveness in children have not been established.

Adverse Reactions: VASOTEC has been evaluated for safety in more than 10,000 patients, including over 1000 patients treated for one year or more. VASOTEC has been found to be generally well tolerated in controlled clinical trials involving 298 patients.

Hypertension: The most frequent clinical adverse experiences in controlled trials were: headache (5.2%), dizziness (4.3%), and fatigue (3%).

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in controlled clinical trials were: diarrhea (1.4%), nausea (1.4%), rash (1.4%), cough (1.3%), orthostatic effects (1.2%), and asthenia (1.1%).

Heart Failure: The most frequent clinical adverse experiences in both controlled and uncontrolled trials were: dizziness (7.9%), hypotension (6.7%), orthostatic effects (2.2%), syncope (2.2%), cough (2.2%), chest pain (2.1%), and diarrhea (2.1%).

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in both controlled and uncontrolled clinical trials were: fatigue (1.8%), headache (1.8%), abdominal pain (1.6%), asthenia (1.6%), orthostatic hypotension (1.6%), vertigo (1.6%), angina pectoris (1.5%), nausea (1.3%), vomiting (1.3%), bronchitis (1.3%), dyspnea (1.3%), urinary tract infection (1.3%), rash (1.3%), and myocardial infarction (1.2%).

Other serious clinical adverse experiences occurring since the drug was marketed or adverse experiences occurring in 0.5% to 1% of patients with hypertension or heart failure in clinical trials in order of decreasing severity within each category:

Cardiovascular: Myocardial infarction or cerebrovascular accident, possibly secondary to excessive hypotension in high-risk patients (see WARNINGS, *Hypotension*); cardiac arrest, pulmonary embolism and infarction, rhythm disturbances; atrial fibrillation; palpitation.

Digestive: Ileus, pancreatitis, hepatitis or cholestatic jaundice, melena, anorexia, dyspepsia, constipation, glossitis.

Nervous/Psychiatric: Depression, confusion, ataxia, somnolence, insomnia, nervousness, paresthesia.

Urogenital: Renal failure, oliguria, renal dysfunction (see PRECAUTIONS and DOSAGE AND ADMINISTRATION), prostate hypertrophy.

Respiratory: Bronchospasm, rhinorrhea, asthma, upper respiratory infection.

Skin: Herpes zoster, pruritus, alopecia, flushing, photosensitivity.

Other: Muscle cramps, hyperhidrosis, impotence, blurred vision, taste alteration, tinnitus.

A symptom complex has been reported which may include fever, myalgia, and arthralgia, an elevated erythrocyte sedimentation rate may be present. Rash or other dermatologic manifestations may occur. These symptoms have disappeared after discontinuation of therapy.

Angioedema: Angioedema has been reported in patients receiving VASOTEC (0.2%). Angioedema associated with laryngeal edema may be fatal. If angioedema of the face, extremities, lips, tongue, glottis, and/or larynx occurs, treatment with VASOTEC should be discontinued and appropriate therapy instituted immediately. (See WARNINGS.)

Hypotension: In the hypertensive patients, hypotension occurred in 0.9% and syncope occurred in 0.5% of patients following the initial dose or during extended therapy. Hypotension or syncope was a cause for discontinuation of therapy in 0.1% of hypertensive patients. In heart failure patients, hypotension occurred in 6.7% and syncope occurred in 2.2% of patients. Hypotension or syncope was a cause for discontinuation of therapy in 1.9% of patients with heart failure. (See WARNINGS.)

Clinical Laboratory Test Findings:

Serum Electrolytes: Hyperkalemia (see PRECAUTIONS), hyponatremia.

Creatinine, Blood Urea Nitrogen: In controlled clinical trials, minor increases in blood urea nitrogen and serum creatinine, reversible upon discontinuation of therapy, were observed in about 0.2% of patients with essential hypertension treated with VASOTEC alone. Increases are more likely to occur in patients receiving concomitant diuretics or in patients with renal artery stenosis. (See PRECAUTIONS.) In patients with heart failure who were also receiving diuretics with or without digitalis, increases in blood urea nitrogen or serum creatinine, usually reversible upon discontinuation of VASOTEC and/or other concomitant diuretic therapy, were observed in about 11% of patients. Increases in blood urea nitrogen or creatinine were a cause for discontinuation in 1.2% of patients.

Hemoglobin and Hematocrit: Small decreases in hemoglobin and hematocrit (mean decreases of approximately 0.3 g % and 1.0 vol %, respectively) occur frequently in either hypertension or heart failure patients treated with VASOTEC but are rarely of clinical importance unless another cause of anemia coexists. In clinical trials, less than 0.1% of patients discontinued therapy due to anemia.

Other (Causal Relationship Unknown): In marketing experience, rare cases of neutropenia, thrombocytopenia, and bone marrow depression have been reported.

Liver Function Tests: Elevations of liver enzymes and/or serum bilirubin have occurred.

Dosage and Administration: *Hypertension:* In patients who are currently being treated with a diuretic, symptomatic hypotension occasionally may occur following the initial dose of VASOTEC. The diuretic should, if possible, be discontinued for two to three days before beginning therapy with VASOTEC to reduce the likelihood of hypotension. (See WARNINGS.) If the patient's blood pressure is not controlled with VASOTEC alone, diuretic therapy may be resumed.

If the diuretic cannot be discontinued, an initial dose of 2.5 mg should be used under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and PRECAUTIONS, *Drug Interactions.*)

The recommended initial dose in patients not on diuretics is 5 mg once a day. Dosage should be adjusted according to blood pressure response. The usual dosage range is 10 to 40 mg per day administered in a single dose or in two divided doses. In some patients treated once daily, the antihypertensive effect may diminish toward the end of the dosing interval. In such patients, an increase in dosage or twice-daily administration should be considered. If blood pressure is not controlled with VASOTEC alone, a diuretic may be added.

Concomitant administration of VASOTEC with potassium supplements, potassium salt substitutes, or potassium-sparing diuretics may lead to increases of serum potassium (see PRECAUTIONS).

Dosage Adjustment in Hypertensive Patients with Renal Impairment: The usual dose of enalapril is recommended for patients with a creatinine clearance >30 mL/min (serum creatinine of up to approximately 3 mg/dL). For patients with creatinine clearance ≤30 mL/min (serum creatinine ≥3 mg/dL), the first dose is 2.5 mg once daily. The dosage may be titrated upward until blood pressure is controlled or to a maximum of 40 mg daily.

Heart Failure: VASOTEC is indicated as adjunctive therapy with diuretics and digitalis. The recommended starting dose is 2.5 mg once or twice daily. After the initial dose of VASOTEC, the patient should be observed under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and PRECAUTIONS, *Drug Interactions.*) If possible, the dose of the diuretic should be reduced, which may diminish the likelihood of hypotension. The appearance of hypotension after the initial dose of VASOTEC does not preclude subsequent careful dose titration with the drug, following effective management of the hypotension. The usual therapeutic dosing range for the treatment of heart failure is 5 to 20 mg daily given in two divided doses. The maximum daily dose is 40 mg. Once-daily dosing has been effective in a controlled study, but nearly all patients in this study were given 40 mg, the maximum recommended daily dose, and there has been much more experience with twice-daily dosing. In addition, in a placebo-controlled study which demonstrated reduced mortality in patients with severe heart failure (NYHA Class IV), patients were treated with 2.5 to 40 mg per day of VASOTEC, almost always administered in two divided doses. (See CLINICAL PHARMACOLOGY, *Pharmacodynamics and Clinical Effects.*) Dosage may be adjusted depending upon clinical or hemodynamic response. (See WARNINGS.)

Dosage Adjustment in Heart Failure Patients with Renal Impairment or Hyponatremia. In heart failure patients with hyponatremia (serum sodium <130 mEq/L) or with serum creatinine >1.6 mg/dL, therapy should be initiated at 2.5 mg daily under close medical supervision. (See DOSAGE AND ADMINISTRATION, *Heart Failure,* WARNINGS, and PRECAUTIONS, *Drug Interactions.*) The dose may be increased to 2.5 mg b.i.d., then 5 mg b.i.d. and higher as needed, usually at intervals of four days or more, if at the time of dosage adjustment there is not excessive hypotension or significant deterioration of renal function. The maximum daily dose is 40 mg.

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Indication: Lower respiratory infections, including pneumonia, caused by *Streptococcus pneumoniae, Haemophilus influenzae*, and *Streptococcus pyogenes* (group A β-hemolytic streptococci).
Contraindication: Known allergy to cephalosporins
Warnings: CECLOR SHOULD BE ADMINISTERED CAUTIOUSLY TO PENICILLIN-SENSITIVE PATIENTS. PENICILLINS AND CEPHALOSPORINS SHOW PARTIAL CROSS-ALLERGENICITY POSSIBLE REACTIONS INCLUDE ANAPHYLAXIS
Administer cautiously to allergic patients
Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics. It must be considered in differential diagnosis of antibiotic-associated diarrhea. Colon flora is altered by broad spectrum antibiotic treatment, possibly resulting in antibiotic-associated colitis
Precautions:
- Discontinue Ceclor in the event of allergic reactions to it
- Prolonged use may result in overgrowth of nonsusceptible organisms
- Positive direct Coombs' tests have been reported during treatment with cephalosporins
- Ceclor should be administered with caution in the presence of markedly impaired renal function. Although dosage adjustments in moderate to severe renal impairment are usually not required, careful clinical observation and laboratory studies should be made
- Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis
- Safety and effectiveness have not been determined in pregnancy, lactation, and infants less than one month old. Ceclor penetrates mother's milk. Exercise caution in prescribing for these patients

Adverse Reactions: (percentage of patients)
Therapy-related adverse reactions are uncommon. Those reported include
- Gastrointestinal (mostly diarrhea) 2.5%
- Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment.
- Hypersensitivity reactions (including morbilliform eruptions, pruritus, urticaria, and serum-sickness-like reactions that have included erythema multiforme [rarely, Stevens-Johnson syndrome] and toxic epidermal necrolysis or the above skin manifestations accompanied by arthritis/arthralgia, and frequently, fever). 1.5%, usually subside within a few days after cessation of therapy. Serum-sickness-like reactions have been reported more frequently in children than in adults and have usually occurred during or following a second course of therapy with Ceclor. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome
- Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy
- As with some penicillins and some other cephalosporins, transient hepatitis and cholestatic jaundice have been reported rarely
- Rarely, reversible hyperactivity, nervousness, insomnia, confusion, hypertonia, dizziness, and somnolence have been reported
- Other: eosinophilia, 2%, genital pruritus or vaginitis, less than 1% and, rarely, thrombocytopenia

Abnormalities in laboratory results of uncertain etiology
- Slight elevations in hepatic enzymes
- Transient fluctuations in leukocyte count (especially in infants and children)
- Abnormal urinalysis, elevations in BUN or serum creatinine
- Positive direct Coombs' test
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JOURNAL

OKLAHOMA STATE MEDICAL ASSOCIATION

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Action: Yohimbine blocks presynaptic alpha-2 adrenergic receptors. Its action on peripheral blood vessels resembles that of reserpine, though it is weaker and of short duration. Yohimbine's peripheral autonomic nervous system effect is to increase parasympathetic (cholinergic) and decrease sympathetic (adrenergic) activity. It is to be noted that in male sexual performance, erection is linked to cholinergic activity and to alpha-2 adrenergic blockade which may theoretically result in increased penile inflow, decreased penile outflow or both.

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Indications: Yocon® is indicated as a sympathicolytic and mydriatric. It may have activity as an aphrodisiac.

Contraindications: Renal diseases, and patient's sensitive to the drug. In view of the limited and inadequate information at hand, no precise tabulation can be offered of additional contraindications.

Warning: Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

Adverse Reactions: Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral a-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.[1,2] Also dizziness, headache, skin flushing reported when used orally.[1,3]

Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.[1,3,4] 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to ½ tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.[3]

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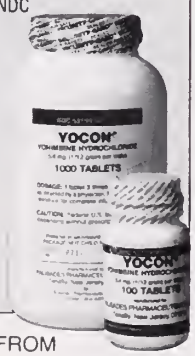

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Duodenal ulcer is a chronic, recurrent disease. While short-term treatment with sucralfate can result in complete healing of the ulcer, a successful course of treatment with sucralfate should not be expected to alter the post-healing frequency or severity of duodenal ulceration.

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Carcinogenesis, Mutagenesis, Impairment of Fertility: Chronic oral toxicity studies of 24 months' duration were conducted in mice and rats at doses up to 1 gm/kg (12 times the human dose). There was no evidence of drug-related tumorigenicity. A reproduction study in rats at doses up to 38 times the human dose did not reveal any indication of fertility impairment. Mutagenicity studies were not conducted.

Pregnancy: Teratogenic effects. Pregnancy Category B. Teratogenicity studies have been performed in mice, rats, and rabbits at doses up to 50 times the human dose and have revealed no evidence of harm to the fetus due to sucralfate. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when sucralfate is administered to a nursing woman.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS
Adverse reactions to sucralfate in clinical trials were minor and only rarely led to discontinuation of the drug. In studies involving over 2,500 patients treated with sucralfate, adverse effects were reported in 121 (4.7%).

Constipation was the most frequent complaint (2.2%). Other adverse effects, reported in no more than one of every 350 patients, were diarrhea, nausea, gastric discomfort, indigestion, dry mouth, rash, pruritus, back pain, dizziness, sleepiness, and vertigo.

OVERDOSAGE
There is no experience in humans with overdosage. Acute oral toxicity studies in animals, however, using doses up to 12 gm/kg body weight, could not find a lethal dose. Risks associated with overdosage should, therefore, be minimal.

DOSAGE AND ADMINISTRATION
The recommended adult oral dosage for duodenal ulcer is 1 gm four times a day on an empty stomach.

Antacids may be prescribed as needed for relief of pain but should not be taken within one-half hour before or after sucralfate.

While healing with sucralfate may occur during the first week or two, treatment should be continued for 4 to 8 weeks unless healing has been demonstrated by x-ray or endoscopic examination.

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1. Eliakim R, Ophir M, Rachmilewitz D: *J Clin Gastroenterol* 1987;9(4):395-399.

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ROSALYN P. STERLING-SCOTT, M.D.

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Associate Surgeon, Department of Cardiovascular & Thoracic Surgery, Centinela Hospital Medical Center, Los Angeles

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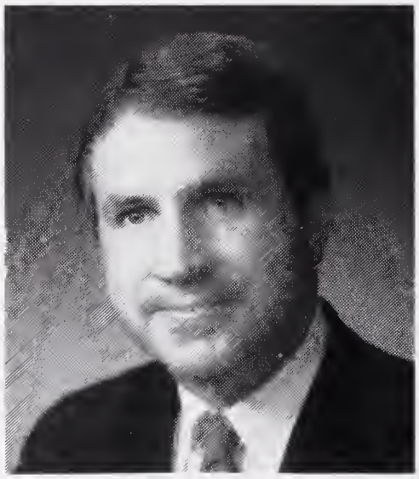

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To date, I have not heard, read, or conjured up a single fragment of rational allegation of benefit to theoretically, hypothetically, or prospectively issue from this requirement. It is a pointless, monstrous extravagance, productive of pure senseless fiction destined to spawn even more senseless fiction.

Not being a mathematician or a biostatistician or a theoretical actuary or a clairvoyant, I cannot appreciate the weighty significance of all this coding. Neither can I appreciate the vast employment opportunities this and subsequent coding requirements will doubtlessly generate.

Substituting numbers and decimals for words surely has a place in numerology, numeration, and numerical taxonomy, but not in the designation of a clinical, medical diagnosis. It has been said and it is true: the best diagnosis in the world is nothing more than one doctor's opinion. Translating that opinion into numbers doesn't make it more or less factual, more or less comprehensive, more or less fictional.

Diagnosis coding is, however, merely the overture for the folly to follow. Already fortunes are being budgeted and plans are underway to begin an expansive study of "outcomes." I am not sure just what this is, but I am sure that whatever it is now, it is bound to grow and undergo an unending series of improvements and refinements. I assume that a coded diagnosis will be subjected to (a soon to be) coded treatment and will enjoy or suffer an outcome (which will be coded as soon as more money and more coders are available).

It does get a bit unclear, but as I see it, if your patient comes down with 968.117xo and is treated with S4316.09zl, the family can expect PR999.79. You must explain, however, that such an outcome will prevail only if your patient is forty-seven years old, has no other diagnosed codes, will accept and is not allergic to S4316.09zl, and has a genuine, manifest desire to achieve PR999.79.

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—MRJ

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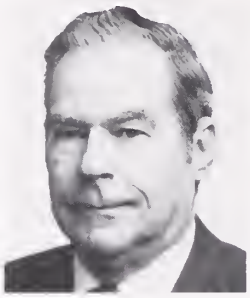

During two centuries of existence, the United States has developed a style of governance that focuses on and reacts to pressures from cohesive groups such as labor unions, retirees, farmers, or industries. Our national legislative process readily responds to vocal groups passionately pushing quick solutions to red-hot problems. Thus, articulate groups have gained major influence in the national life. Today, aggressive groups try, through Congress, to improve their financial leverage or prevent domination by other groups, and Congress will respond to any unified voting group. Currently the United States has a government of, by, and for those special interest groups skillful at manipulating the legislative process.

While this pattern of governance has been developing, health care service has come to be a very important commodity in our nation. In 1789, physicians had little effect on the affairs of the general population, but in 1989 health concerns are very important to everyone, and 11% of the gross national product is now spent on health-related expenses. The health care consumer has become the number one special interest group in the United States. Today's patients desire more medical care than the nation wishes to buy.

The improvement of medical care was the reason for the formation of medical societies in the beginning, and the intellectual development of the physician was their principal activity. But the current consumer demand for government-aided health care has changed most medical societies' principal mission into being a reactive foil to government problems — a defense league against the politicians. Medical societies now spend most of their energy defending against government encroachments into medical care, and have less time and strength for medical improvements. The necessity to resist government intrusions has preempted organized medicine at a time when other significant changes have appeared in the medical environment.

During the last thirty years there also has been a significant expansion of specialty medical societies. These groups were originally formed to promote interest in the particular specialty, provide continuing medical education focused on the specialty, and set standards for certification and accreditation. These laudable goals serve to advance medicine in general, but today, many physicians also wish to rely on the specialty society to be the profession's defender in the battle with the government. There is now a danger that simultaneous use of the specialty societies and the traditional societies in government negotiations will weaken the effectiveness of both.

In the coming decade there will be a strenuous battle for the soul of the medical profession as the government reacts to the huge health consumer demand for modern medical care, and the physicians try to deliver compassionate, contemporary medical science and technology to a burgeoning population in need. In the forthcoming struggle to determine whether the politicians or the medical scientists will conduct the delivery of health care to the people, we physicians must be ever mindful of the politician's instinctive stratagem: "divide and conquer."

The medical profession is currently vulnerable to this tactic since our medical societies are now in the process of redefining their missions and replicating themselves into differentiated specialty and regular societies with new perspectives. And as the British government imposed their regressive National Health Service by playing off the consultants against the general practitioners, so we face a danger of the government contrapositing the numerous specialty societies against the AMA and the state medical societies.

A strong and articulate organization representing *all physicians* is necessary in confrontations with the government. The divided voices of the multiple specialty groups will have little effect in that forum. We in medicine must be aware of the proper role for both types of societies, and encourage the specialty societies to concentrate on their educational roles. The state and national societies must give enough effective leadership in the political arena that the specialty groups will defer to the Oklahoma State Medical Association and the American Medical Association to represent their interests to the Congress and state legislature.

If we remember our respective duties to society, both types of societies can give the necessary strength to each of these important tasks. In unity there is strength for the critical times ahead. Let's hang together.

Ray V. McIntyre, M.D.

In Situ Saphenous Vein Grafts for Limb Salvage

M. Alex Jacocks, MD

New techniques in diagnosis and intervention have enhanced limb survival in patients with peripheral arterial disease.

Patients with severe, limb-threatening ischemia manifested by rest pain or nonhealing ulcers on their feet represent a challenge to their physicians. Techniques in vascular reconstruction of the past decade have contributed greatly to the success in dealing with these problems. While the saphenous vein continues to be the bypass conduit of choice, widespread interest in newer "in situ" techniques have raised questions about the optimal methods to prepare and use the vein. Concern involving vein preparation and the recognized importance of vein preservation for the overall success of distal bypasses led us to compare our results with traditional reversed vein bypass conduits versus "in situ" saphenous vein bypasses for arterial reconstructions below the inguinal ligament.

Methods

Two groups of patients are analyzed to evaluate success with distal bypasses. Group I consists of 39 consecutive patients who underwent 44 infrainguinal arterial reconstruction with reversed saphenous veins between July 1977 and June 1985. Data for this group were analyzed retrospectively and compared to data gathered prospectively for 53 patients who had 55 procedures with in situ saphenous vein grafts from October 1985 through September 1987.

Aortograms with aortofemoral runoff arteriograms were obtained for all patients considered for reconstruction. Proximal aortoiliac reconstructions were completed prior to distal revascularization. Patients with questionable iliac artery lesions underwent papaverine stimulation tests preoperatively.[1] Patients with Doppler pulses at the ankle but no vessel on arteriogram underwent femoral artery cut-down and pre-bypass, intraoperative arteriography to select the best vessel prior to bypass.[2]

Reversed saphenous vein was used as the conduit in all patients in Group I. Sharp, careful dissection was used to remove the vein, with ligature of branches with fine silk. Distention of the vein was most commonly done with a syringe and room temperature heparinized saline (more recently, cold heparinized blood with papaverine has been used). The proximal anastomosis was at the common femoral-profunda level. The vein graft was passed through the subcutaneous or the subsartorial space to the level of the distal anastomosis. Completion arteriograms are routine to evaluate technical problems.

Saphenous veins were left in situ in patients in Group II. In addition to preoperative arteriography, all patients had saphenous venography and/or saphenous vein Duplex ultrasound scanning to evaluate the anatomy and suitability of the vein for bypass. In those patients with a single large saphenous vein in the thigh, the valves were rendered

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incompetent with a Leather valve cutter[3] while the valves below the knee were sharply incised with a reversed Mills valvulotome under direct vision. If multiple re-anastomosing branches of the saphenous vein were identified in the thigh, the valvulotome was used for the whole vein. Venous distention was accomplished by arterial inflow only. Arteriovenous branches were identified with Doppler ultrasound and ligated. Completion arteriography of the entire graft and distal anastomosis was performed routinely.

Results

Table 1 compares demographic and risk factors of the two groups. Both groups consist of predominantly white (70%) males (88%) who are or have been heavy smokers (90%). The patients in Group II are slightly older and include a few more diabetics than those in Group I.

Most patients from both groups were treated for severe, limb-threatening ischemia as shown in Table 2. The point of distal anastomosis is shown in Table 3 and was predominantly well below the knee in both groups.

The results of the reconstructive procedures are summarized in Table 4 and the figure. The leading cause of death in both groups was cardiac disease (2 from Group I and 2 from Group II), emphasizing the systemic nature of the disease process in these patients. Other causes of death were pulmonary insufficiency and sepsis. Most major amputations occurred early in both groups, although the mean follow-up time is limited. Graft success was gauged by healing of ulcerated lesions or relief of pain symptoms, avoidance of a major amputation, and survival of the patient. Graft success was achieved in 57% of patients in Group I and 84% of patients in Group II ($p<0.05$) at six months. The figure compares cumulative limb survival between these two groups, again revealing an early advantage to the in situ group.

Discussion

Patients with rest pain and gangrene or nonhealing ulcers represent the end stage of progressive atherosclerotic obliterative disease. These patients will require a major amputation in almost all instances if improved circulation cannot be secured. While the usual recommendations to avoid tobacco, exercise to tolerance daily, and practice meticulous foot care are still important for these patients, one cannot expect symptomatic relief for these severe symptoms.

Table 1. Group Risk Factors

	Group I (1977-1985)	Group II (1985-1987)
# Pts.	39	53
# Procedures	44	55
Age	59 (±11.4) yr	64 (±13.5) yr
DM	30%	40%
HTN	57%	57%
Smoker	95%	85%

DM = Diabetes mellitus; HTN = Hypertension

Table 2. Indications for Operation

	Group I (1977-1985) (n = 44)	Group II (1985-1987) (n = 55)
Rest pain	21 (48%)	18 (33%)
Gangrene/ulceration	22 (50%)	33 (60%)
Claudication	1 (2%)	4 (7%)

Numerous pharmacologic agents have been tried to alleviate the ischemia including α-blocking and β-stimulating vasodilators, direct vasodilators, calcium channel blockers, and hemorrheologic agents. None of the agents has improved circulation by any measurable amount or improved limb survival. Mechanical intervention then becomes necessary.

Percutaneous balloon angioplasty has achieved a certain degree of usefulness for lesions of limited degree. The best results have been in the iliac and upper femoral artery system.[4] Most patients with rest pain or nonhealing ulcers, however, have extensive disease involving long areas of complete occlusion and usually including the smaller below-knee tibeoperoneal arteries which are not well suited to balloon angioplasty.

Szilagi's report in 1979[5] was one of many to show that satisfactory limb salvage could be achieved with reversed vein grafts to the tibeoperoneal arteries. He reported a 48% three-year graft patency rate in these difficult cases, similar to our results at two years. It was also clearly shown that the quality of the vein graft had a significant effect on the long-term patency and limb survival. Good quality vein grafts had a 65% three-year patency, while poor quality vein grafts had a 30% three-year patency.[5]

The concept of leaving the saphenous vein in

Table 3. Site of Distal Anastomosis	Group I (1977-1985)	Group II (1985-1987)
Above-knee popliteal		8 (15%)
Tibeoperoneal trunk		10 (18%)
Anterior tibial	17 (40%)	9 (16%)
Posterior tibial	22 (50)%	25 (45%)
Peroneal artery	5 (10%)	3 (5%)

Table 4. Results	Group I (1977-1985) (n=44)		Group II (1985-1987) (n=55)	
Follow-up	14.6 mo	(±16)	8 mo	(±6.7)
Deaths	6		4	
Maj amputations	>6 mo	17	8	
	<6 mo	3	1	
Graft success @ 6 months	25 (57%)		46 (84%)	(P<0.05)

place for use in arterial bypass grafting is not new. Hall[6] and Connally[7] were working with in situ veins in the 1950s and have used a number of different techniques to eliminate the valves in the nonreversed saphenous vein. The work of Leather and Karmondy[8] in the development and use of valve cutters and valvulotomes to sharply incise the valves, and their demonstration of an outstanding five-year patency of 64% in the infrapopliteal position, stimulated many surgeons to investigate the technique.

There are several potential advantages to the in situ technique. A more appropriate size match exists between the distal artery and distal vein than if the vein is reversed, which potentially has hemodynamic and flow characteristic importance. Gewertz[9] recently demonstrated better flow through valves that had been sharply incised compared to reversed vein valves. Additionally, the endothelial lining of the in situ vein should be better preserved. It has a minimal amount of ischemia since the vein is not fully removed from the tissue bed and the vasa vasorum has not been disrupted. High pressure distention with

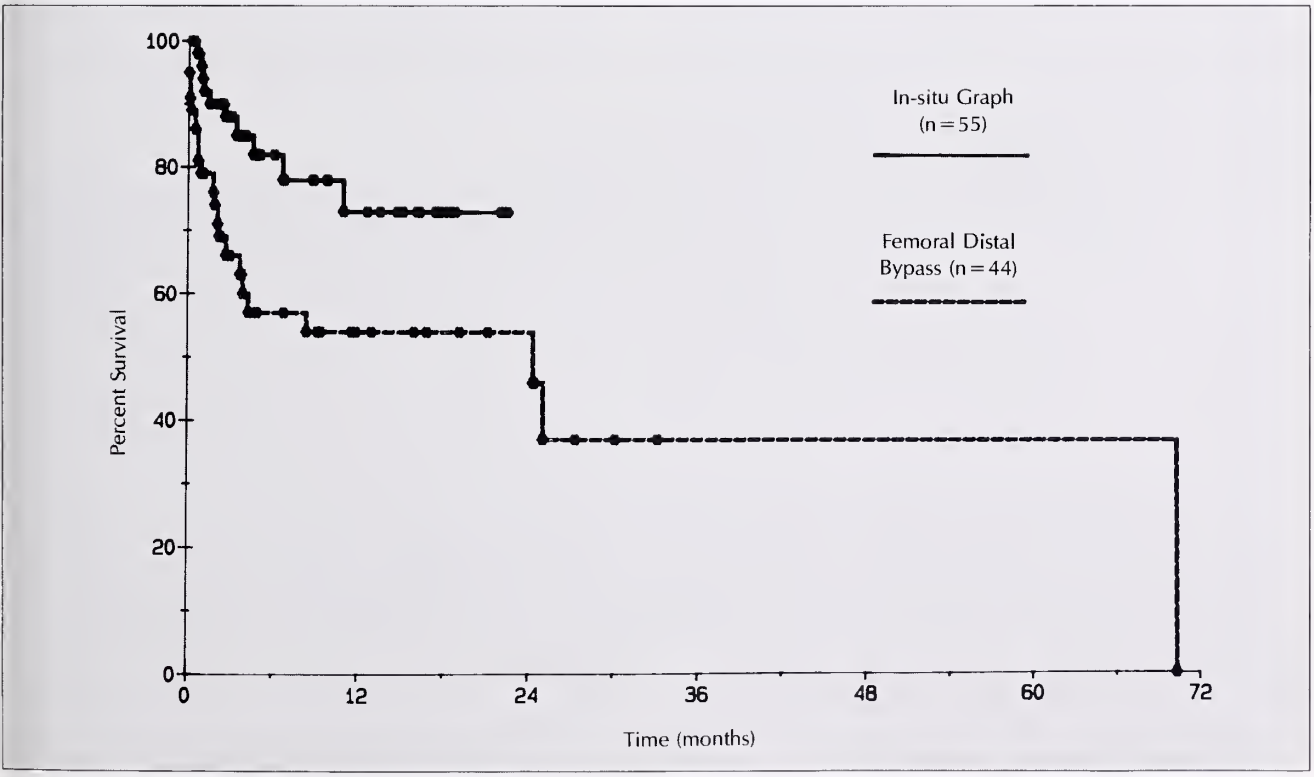

Figure. Cumulative limb survival distribution by operative procedure.

electrolyte solutions has been shown to severely damage the delicate endothelial lining.[10]

Because of the improved flow characteristics and better endothelial preservation, veins of small size (2.5 mm) have been utilized rather routinely. Leather reports that a 95% vein utilization rate was obtained versus approximately 80% utilization for most surgeons searching for a 4.0 mm vein for reversal.

There is a learning curve, as with any new technique, and in situ bypass techniques are no different.[11] Gentle handling of the vein, precise dissection, preservation of blood flow to the intima, and avoidance of intimal trauma and vein spasm during incision of the valves are most important. While one method to remove the valves has been briefly discussed here, these principles apply to all the techniques for distal infrapopliteal bypass. In fact, Porter[12] has recently reported long-term patency rates with reversed vein grafts similar to rates with in situ grafts and feels the newer techniques of vein handling account for the improved results. Unquestionably, patience and meticulous attention to detail are important to obtain success with these very distal grafts.

This report cannot be taken as a condemnation of reversed vein grafts since the study groups were nonconcordant, partially retrospective, nonrandomized, and of short follow-up duration. The two population groups were similar in composition, however, handled in consecutive order, and felt to represent severe, end-stage disease. We therefore think the suggested improved limb survival rate in the in situ group compared to the reversed vein group will continue to hold up with time and is of significance. Reversed vein grafts will continue to be useful in patients with previous vein dissection for other bypass procedures or previous vein stripping for varicosities.

The most encouraging finding of this review is that more than 75% of patients whose legs appeared doomed to amputation were salvageable. The noninvasive vascular laboratory effectively identifies patients with correctable large artery obstructions. Well-planned, aggressive debridement and arterial reconstruction can be used safely to help keep patients pain free, self-sufficient, and ambulatory.

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Coming next month

Among the manuscripts being considered for publication in April are a review of hearing preservation after the resection of acoustic neuroma; a report on the past, present, and future of growth hormone; and a commentary on promotional gimmicks in medicine.

Experience with Endomyocardial Biopsy in 23 Patients with Heart Transplants

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In the 33-month period April 1985 to December 1987, endomyocardial biopsy was performed 314 times in 23 patients with orthotopic (21) or heterotopic (2) heart transplants at Baptist Medical Center. The technique is described. Adequate tissue was obtained in 99% of cases and there was only one complication from the procedure. Mild to severe acute rejection was seen in 105 specimens (33%). The histopathological interpretation has proved invaluable in the care of patients with heart transplants.

Percutaneous transvenous or transarterial biopsy of right or left ventricles with specially designed forceps, to provide fragments of endomyocardium for histological examination, was first described by Sakakibara and Konno in 1962,[1] and 10 years later was introduced as a clinical tool in heart transplantation by Caves and his colleagues.[2] Indications for endomyocardial biopsy (EMB) include evaluation and diagnosis of myocarditis, cardiomyopathy, myocardial involvement in systemic disease (eg, sarcoid or amyloid), heart transplant rejection, and cardiac tumors.

EMB plays a central role in the clinical management of heart transplant recipients for the determination of acute organ rejection. At Baptist Medical Center, 314 EMBs have been performed on 23 cardiac transplant recipients. We have reviewed our experience with this technique in the management of patients with orthotopic (21) and heterotopic (2) heart transplants.

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Endomyocardial Biopsy Technique

In Patients with Orthotopic Heart Transplants. An anterior approach to the internal jugular vein is preferred. Under local anesthesia, the needle is directed from the top of the triangle formed between the sternal and clavicular heads of the sternocleidomastoid muscle and advanced slowly, while aspirating, towards the contralateral nipple. A straight tip guidewide is passed through the needle into the superior vena cava, and over this a Number 8 or 9 French sheath is advanced. The guidewire is removed. A short guiding sheath is then passed over a long J-tip guidewire to the apex of the right ventricle. Ventricular ectopy is often encountered at this point, and monitoring of the patient's rhythm is essential. The long J-tip guidewire is removed, and a disposable Cordis bioptome advanced in the closed configuration until it exits the sheath, and premature ventricular contractions are noted, which often indicate contact with the endocardium. The bioptome is then withdrawn slightly, and the "jaws" opened. The bioptome is slowly and gently advanced and the jaws closed, after which it is pulled briskly back into the guiding sheath and removed. At least three EMBs are obtained in the above manner. The guiding sheath is then removed, followed by the venous sheath, with the patient in the sitting position to prevent air embolism; the right

neck and vital signs are checked at 15-minute intervals for 45 minutes.

The right femoral vein approach is useful in patients in whom internal jugular vein access is technically difficult, or when the vein has thrombosed due to previous central venous line placements. Patients are observed for two to three hours after the procedure.

In Patients with Heterotopic Heart Transplants. A supraclavicular approach has been described.[3] In our two patients, however, stenosis at the right atrial anastomosis has led to difficulty in entering the donor right ventricle. We have therefore elected to perform left ventricular EMB utilizing a femoral artery approach. After local anesthesia, the femoral artery is entered percutaneously, and a straight tip guidewire placed in the vessel, over which a Number 9 French sheath is placed and aspirated. Subsequently, a Number 7 French FR4 right coronary artery diagnostic catheter is advanced over a long J-tip guidewire and utilized to direct the guidewire across the aortic valve into the donor left ventricle. The right coronary artery catheter is removed. A long guiding catheter sheath is then advanced over the J-tip guidewire, the guidewire removed, and through the guiding sheath, a long disposable Cordis bioptome is advanced to the apex of the left ventricle. As patients with heterotopic transplants are anticoagulated with coumadin, we have sometimes observed them overnight following EMB.

Histopathological Interpretation

A minimum of three endomyocardial fragments (each 1-2 mm in diameter) is required to reduce sampling error, increase sensitivity, and avoid false negatives. The biopsies are transported in buffered formalin and processed for light microscopy using three stains (hematoxylin-eosin, trichrome, and methyl green pyronine).

The biopsies are classified by morphologic criteria as follows: (i) no evidence of rejection; (ii) mild, (iii) moderate, (iv) severe, or (v) resolving acute rejection; (vi) biopsy site changes; and (vii) an inadequate biopsy. Grading of rejection as to mild, moderate, or severe is based on the intensity and location of the inflammatory infiltrates, the cytomorphology of the lymphocytes mediating the tissue rejection, and the presence or absence of myonecrosis.[4,5]

Mild acute rejection is usually recognized by a sparse perivascular interstitial infiltrate composed of pyroninophilic lymphocytes that may be accompanied by interstitial edema. *Moderate acute rejection* features a more diffuse interstitial lymphocytic infiltrate characterized by a tendency for the lymphocytes to aggregate into "space-occupying" masses or linear ribbons within the interstitium. Some degree of myocyte degeneration and/or necrosis may accompany moderate rejection. *Severe acute rejection* is characterized by interstitial hemorrhage, myocyte necrosis, and the presence of infiltrating neutrophils. *Resolving acute rejection* is seen on follow-up biopsies and is recognized by a reduction and/or disappearance of the pyroninophilic lymphocytes, leaving scarred foci with fibroblasts and lipochrome pigment.

The biopsy procedure itself can lead to histological changes very similar to those seen in acute rejection.[6-8] Certain features, for example the presence of clot overlying the biopsy site, can help the histopathologist in differentiating such changes. In the present review, such features were recognized in 20 cases (6%) (Table).

The presence of fibrosis in the myocardium, particularly in patients who underwent transplantation some months or years previously, might indicate the development of some degree of graft atherosclerosis (chronic rejection), which is believed to be a low-grade immunological response resulting in the development of diffuse atheromalike changes in the coronary arteries, in turn leading to progressive ischemia of the myocardium.[9]

The histopathologist's observations were reported to the clinician, who interpreted the report in the light of the clinical progress of the patient, and determined what further therapeutic steps should be taken.

Results and Complications

In the 33-month period, April 1985 to December 1987 inclusive, 314 biopsies were performed in 23 patients with orthotopic (21) or heterotopic (2) heart transplants. Three patients have undergone over 20 biopsies each, spread over the 2¾-year period. There were no complications when the approach was venous from neck or groin. We have seen one complication associated with the arterial approach in a patient with a heterotopic transplant; the patient sustained a cerebrovascular accident, presumably from thromboembolism, from which she has made a good recovery. Repeated biopsy did not appear to increase the risk.

Tissue inadequate for interpretation by the histopathologist was obtained on only four occasions

Table. Histopathological Features of 314 Consecutive Endomyocardial Biopsies from 23 Patients with Heart Transplants (1985-87)

Acute Rejection	None	184	(58%)
	Mild	69	(22%)
	Moderate	33	(10%)
	Severe	3	(<1%)
	Resolving	8	(<3%)
Biopsy site changes		20	(6%)
Inadequate/inconclusive		4	(1%)
Total		314	(100%)

(1%).[1] One hundred and five EMBs (33%) distributed among 20 patients showed patterns of rejection varying from mild to severe (Table). All but three patients had from one to nine biopsies showing rejection, which typically occurred in the first weeks to months following transplantation. Three patients have suffered no acute rejection whatsoever since transplantation, and three further patients, who to date have survived beyond two years, have been "rejection free" for over a year.

Discussion

In our hands, EMB has proved valuable and safe. Adequate biopsy tissue was obtained on 99% of occasions, and there has been only one complication (0.3%), which compares favorably with other reported series.[3,10] The absence of any infectious complication in patients who were at times heavily immunosuppressed is encouraging. Complications reported by others include pneumothorax, nerve paresis (phrenic, brachial plexus), hemorrhage, infection, and ventricular perforation.

EMB remains invaluable in the management of heart transplant patients, particularly during the first three months when the incidence of acute rejection episodes is greatest. The incidence of severe rejection in this series was only 1% (three biopsies in two patients), suggesting that the immunosuppressive regimen employed was effective in preventing or containing rejection in the majority of patients.

EMB is, however, an invasive procedure with potential complication; the search is continuing for a noninvasive test that would provide equally valuable information.[11]

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Occupational Medicine and Worker's Compensation in Oklahoma

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The worker's compensation system in Oklahoma is the product of a long history of evolution involving influences from social, legal, political, cultural, and economic realms. This process of adaptation continues today. Most recently the system was amended effective November 1986. The basic principles of a worker's compensation program are important, as well as the new changes resulting from recent reforms.

Historical Aspects

Historically, worker's compensation programs have frequently been subject to review and adaptation. Most recently, in Oklahoma, the program was amended with new rules taking effect in November 1986 and spring 1987. Many of these new rules are of significance to the medical practitioner. This paper will review the relevant aspects of worker's compensation in Oklahoma.

The concept of worker's compensation has not always existed. As recently as the nineteenth century, the legal system relied on common law principles to guide it in its evaluation of the injured worker. Under that system there were three main defenses that were available to the employer when the employee was injured and sought compensation: contributory negligence, fellow-servant doctrine, and assumption of risk.[1]

The major one of these three defenses is contributory negligence. Under this concept, if it could be shown that the employee had through his actions contributed in any degree to the injury for which he was seeking compensation, he could not collect. Approximately eighty percent of the suits that were brought at that time for on-the-job injuries were decided in favor of the employer, based on the principle of contributory negligence.

The second major defense is known as the fellow-servant doctrine. This doctrine is similar to the one discussed previously in that if the employer can show a fellow employee acted negligently in any degree and that action injured another employee, the employer was not responsible for compensation for the injury. Under this doctrine about ten percent of the cases were decided in favor of the employer and compensation was not awarded.

Lastly, there is the concept of assumption of risk. Under this doctrine it is believed that a worker, at the time he becomes employed, either is aware or should be aware that certain attendant risks will accompany the day-to-day functions of the job. By accepting the job, he indicates that he not only is knowledgeable of the risk but is willing to accept responsibility. About seven percent of the cases were decided in favor of the employer based on this doctrine. Consequently, only about two to three percent of cases were successful in recovering for injuries on the job.

As the nineteenth century progressed, the industrial revolution continued to advance. As a consequence, the concept of liability without fault began to evolve in the justice system. This concept is the

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key to evolution of a worker's compensation system. The growing feeling at the time was that indeed there were some inherent risks to any employment. However, it became the opinion of the justice and social systems that because there were inherent hazards, it should be the responsibility of employers to include the cost of injuries as part of their cost of production. They accomplished this through the concept of liability without fault, which in practical terms says to the employer, you are not negligent in causing or contributing to the injury sustained by the employee; however, we will assign liability to you for those costs, even in the absence of negligence or fault.[2]

As this concept began to work its way into the legal system in Europe and eventually into the United States, the challenges to its constitutionality were unsuccessful, and the concept of liability without fault became established as a valid principle in American law. The various states quickly adopted worker's compensation laws to protect their workers. In Oklahoma, the first compensation statutes were enacted in 1915. Under these statutes, only injuries were covered, and the laws established a statutory list of hazardous manual and mechanical jobs. There was a certain amount of simplicity in this, in that a worker would know that if his job were on the list, he was covered by worker's compensation. Otherwise, he would be required to pursue compensation through the common law system.[3]

The system worked and remained intact until 1925, when an Oklahoma Supreme Court decision resulted in what is known as the Non-Apportionment Rule. It had been assumed that under worker's compensation, the employer would be responsible for disability resulting from on-the-job injuries and would not be liable for preexisting disabilities. However, the Non-Apportionment Rule said that if a previously disabled worker were injured on the job and that injury resulted in permanent disability, the employer was liable for the total resulting disability in that individual.[4] As a result of this ruling, within one month several thousand workers were fired from their jobs in Oklahoma[5] and, until 1943, it continued to be difficult for disabled workers to find jobs.

Legislation in 1977 included for the first time the provision for rehabilitation, both medical and vocational.

In that year, the legislature created the Special Indemnity Fund. This was done in an effort to put the disabled back to work during World War II, when the demand for all available workers was very high. In addition, the act was designed to provide for the future employment of returning disabled veterans. The Special Indemnity Fund was set up to essentially undo the effects of the Non-Apportionment Rule. It was a mechanism by which the employer was once again held responsible only for that portion of the total disability attributed to the workplace. Additional portions of the total disability that related to prior disabilities could be compensated in part through the Special Indemnity Fund, which is not part of the funding mechanism of ordinary worker's compensation.[3]

The next major impact on worker's compensation in Oklahoma began in 1970 with the Occupational Safety and Health Administration Act. One of the lesser known provisions of that act was the creation of the National Commission of State Workmen Compensation Laws. Perhaps the original intent of this was to establish a national worker's compensation law, but it became clear that would not be possible. In lieu of that, a report[1] was made recommending essential features of worker's compensation that should be present in the individual state worker compensation statutes. These consisted of 19 essential recommendations, only six of which were in place in Oklahoma at the time of the report. This report was of interest to then Governor David Boren who, in 1975, set in motion the forces of the state legislature to accomplish worker's compensation reform.

The results of that reform were passed in 1977. This legislation had two important features. First, it discarded the previous basis for coverage, which was described as hazardous manual and mechanical labor. The laundry list was cancelled; the type of employment covered under the new law was vastly increased, recognizing that the trend over time had been toward fewer and fewer manual and mechanical workplaces and increasingly toward a sedentary and service-related economy. Second, it adopted physical impairment as a test of disability. Under the old system, the test was a subjective one for the physician — whether an individual was able to perform manual

labor. The American Medical Association *Guides to the Evaluation of Permanent Impairment* was adopted to accomplish the test of physical impairment. Other facets of this reform included for the first time the provision for rehabilitation, both medical and vocational; establishment of the office of Administrator of the Court to increase the efficiency of the system; and significantly, for the first time in Oklahoma, coverage for occupational diseases.[3]

The next major force to act on the Oklahoma worker's compensation system was economic. That is, for the first time in recent history, an economic downturn had significantly affected the Oklahoma economy. As a reaction, the state Chamber of Commerce was very interested in trying to improve the business climate in the state and felt one of the most significant ways to do that would be decreasing industry's worker compensation costs. It was recognized that it would take approximately three years for lowered costs to affect the insurance premium ratebooks; yet there was a need to change costs quickly. Two solutions were formulated. One was the adoption of a fee schedule for medical costs. The second was an attempt to curb the practice of "doctor shopping."[6] The result of efforts by the state Chamber of Commerce and the Legislature culminated in the enactment on November 1, 1986, of Senate Bill 496 and House Bill 1920.

Occupational Injuries

How does one define the type of injury that will or will not be covered by worker's compensation? The statutes use the phrase *out of and in the course of employment* to define what is covered or not covered. *Out of* refers to the origin and cause of the accident. *In the course of* refers to the time, place, and circumstances of the accident. In order to be covered under worker's compensation, both of these phrases should be applicable to the normal course of employment.[2]

Not only are the obvious job-related injuries covered, but many less obvious ones as well. For example, the court often allows coverage for injuries that occur during lunch breaks, rest breaks, or coffee breaks, and injuries that occur during recreational activities, such as those which arise from playing on a company softball team when the employer encourages employee participation on that team. Also, coverage may be extended to preparatory acts prior to work and to activities related to seeking warmth, coolness, or toilet facilities. Coverage may extend to non-participating victims of horseplay, even though the actual participants may not be covered.[7]

Over time, the concept of an occupational injury has changed somewhat. Beyond obvious bruises, cuts, broken bones, and the like, it has become commonly accepted that an occupational injury may include the results of cumulative minor traumas; it may even include disabilities that result from normal job functions that do not necessarily involve excessive use, stress, or strain. Examples of the latter might include heart attacks or strokes that occur on the job.[8]

Occupational Diseases

Since 1977 in Oklahoma, compensation has been provided for occupational diseases as well as injuries. The definition of an occupational disease covers those illnesses which are due to causes and conditions "peculiar" to the particular trade, occupation, process, or employment. It is sometimes difficult to interpret the word *peculiar* since physical activity, stress, and strain are pervasive in so many forms of employment. The legal system uses three main guidelines to determine whether a disease is occupationally related. First, is there an exposure to a substance that is peculiar to the individual workplace which increases the workers' risk of contracting disease? Second, is there an increased risk of contracting a disease of ordinary life? And third, did the injury aggravate a disease of ordinary life? If so, the resulting disability would be occupationally related.[8]

The concept of diseases of ordinary life becomes important because the subjects of hypertension, diabetes, heart attack, and stroke come up with increasing frequency in relation to the job. Although not universal, there is an increasing trend to consider a heart attack as an occupational aggravation of a non-occupational disease, atherosclerosis. Similarly, cancer is many times covered. When a disease is covered by worker's compensation, it will be covered in its entirety, provided it is aggravated or accelerated by a job injury or exposure. Worker's compensation coverage is comprehensive and, in addition to that already discussed, includes repair or replacement of artificial limbs, teeth, heart, pacemaker, or other internal organ mechanisms.[8]

The Physician's Role

As physicians, what are our responsibilities in the setting of worker's compensation? Of course it is to provide care for the injured and ill worker, but in addition to the ordinary medical issues, we are

responsible for assisting with the processing of a legal claim through the worker's compensation system. Our most important contribution in that regard is the preparation of a medical report that is legally competent. Basically, that means the report will include a history as given by the patient, the results of physical examinations, laboratory studies, and x-ray examinations, and an opinion as to the causal relationship between the workplace and the injury or illness. It is also important to realize that physicians may invoke vocational rehabilitation services for the patient. These are available for up to two years with court approval, and it is appropriate to request them on behalf of patients when they are needed.[9]

The new rules continue to require use of the American Medical Association Guides[10] to do physical impairment testing and disability rating. They specify that under ordinary circumstances there will be no justifiable deviation from the use of the guides. They continue to have scheduled members in the statutes that are separate from the guides, and while you are not required to use the guides in evaluation of scheduled members, you may. If you do, however, the evaluation must reflect the listing of scheduled members according to the statutory list. (An interesting change was made in the listing of scheduled members: hearing impairment was removed from this list and placed exclusively under the coverage of the Guides to Evaluation of Impairment.[9])

An independent medical examination will be mandatory under the new system if the claimant and respondent medical reports differ by more than twenty-five percent in their ratings of permanent impairment or if there is no lost time resulting from the injury or illness. It is important in writing reports to remember that preexisting disability is a credit for the employer, whether it has been previously adjudicated or not.

Medical reports must reflect an opinion of the level of preexisting disability at the time of the most recent injury.

We are not required to adhere to prior adjudications of disability. Medical reports must reflect an opinion of the level of preexisting disability at the time of the most recent injury. The presumption of the court will be that the condition was unchanged from prior adjudicated injuries,[9] but in all practicality, any degree of change may have been possible and the patient-claimant will be depending upon the physician's judgment in the estimation of the disability that was present.

At some point, a settlement must be reached. Generally this is done by what will be called a joint petition, wherein the parties set to writing their agreement to a full and complete resolution of the claim. There are some limitations in this process, however. There are some time limits, for example, on the filing of injury claims. The limits are two years from the time of injury or last trauma, or one year from last temporary total disability payment, or one year from the last authorized medical treatment. For diseases, the time limits are two years from the last hazardous exposure. Exceptions are made for asbestos, silica, and radiation, which are covered under separate statutes outside the worker's compensation system.

It is interesting to note that the Commission on State Worker Compensation Laws had recommended a three-day maximum waiting period for total temporary disability benefits. The recent Oklahoma changes have resulted in a seven-day waiting period, which means there are no benefits paid for the first seven days of disability. However, if the disability continues beyond 21 days, benefits may be computed from the beginning.[9]

Recent Changes

At the core of recent legislative changes was "doctor shopping." It was felt, upon close examination, that much of the excess cost of worker's compensation had resulted from unusually high medical care costs. Some of these were arising because of "doctor shopping" practices of injured employees, who would participate in consecutive courses of treatment from different practitioners. As a result, not only was there a delay in return to work, but many times a delay in recovery, and in any case, a considerable increase in cost to the compensation system.

Under the new rules, once the employee has made an affirmative voluntary choice of physicians, he may not change physicians without the approval of the court. If he does, any and all providers become subject to a five hundred dollar limit on all fees.[11]

Note that the affirmative voluntary choice on the part of the employee will not extend to the treatment given by an emergency room or a minor emergency center.[6] Therefore, the physician may have considerable difficulty in some cases deciding whether the five hundred dollar cap applies as treatment of a patient is begun.

There are two things the physician may do to provide for financial protection. The first is to call the involved worker's compensation carrier and notify them that care is to begin. The physician may also inquire as to whether the carrier has any notice of prior care being given to the patient. Second, the physician should file a Form 4, the theory being if the carrier is given proper notice and does not inform the physician that the limit is in effect, he or she may be able to recover the full amount for the cost of care.[6]

The second significant change made by the recent reforms involves the enactment of a fee schedule covering medical care for worker's compensation patients. This was done by legislative mandate and was accomplished by the administrator of the court. After considerable review, a fee schedule system resembling that of New York state was put into place effective March 13, 1987. While the fee schedule covers physicians' charges, hospitals were specifically exempt, as well as medicolegal examinations which may be performed in determination of disabilities.[11] A detailed discussion of the fee schedule is not within the scope of this article and I refer the reader to various instructional seminars, some of which are available from the Oklahoma State Medical Association.

Basically, the system that was put into place consists of a listing of medical procedures in various categories, along with a coding system that represents relative values. Each section is assigned a conversion factor and, by multiplying the conversion factor by the relative value code associated with the procedure code, the physician will arrive at a maximum allowable fee under the system. The rules of the fee schedule say the physician may charge the lesser of his or her usual and customary fee or the maximum allowable fee resulting from the use of the fee schedule.[11] The use of the fee schedule, therefore, does not encourage adjustment upward of the physician's clinic fee schedule. However, built into this system is a periodic review of the fee schedule, and possible adjustments may be made at that time.

Results of the first review of the fee schedule are due for implementation in the spring of 1989. Planning for that revision includes a proposed increase in the conversion factors used to calculate maximum reimbursement levels. Other proposed plans are to include coverage of emergency room services, hospital outpatient radiology, physical therapy, and pathology, and enlarge the radiology fee schedule to specify codes for MRI procedures. More detailed information should be available when the updated schedule becomes effective. Public hearings on the new schedule are tentatively scheduled for March.

Not only is the calculation of maximum fees important to physicians, but also the concept of proration of fees that is raised by the fee schedule. The fee schedule defines concurrent care as existing when there is more than one physician treating a patient for the same condition during the same period of time. When concurrent care is given, payment will be made by the worker's compensation system to the physician whose specialty is the most relevant to the diagnosis. When, on the other hand, there are two or more physicians treating the patient at the same time but for different conditions, both will be paid, but their services must be distinct, identifiable, in different disciplines, and clearly documented in the medical record.

Another issue is transferring a patient. If the patient is transferred to another physician of the same specialty, the involved physicians must prorate the fee. Similarly, if surgery is provided to a patient and follow-up care is provided by someone other than the operating surgeon, the fee must be prorated between the surgical specialist and the follow-up physician.[11]

Recent changes to the Special Indemnity Fund were enacted in House Bill 1920. The most significant change states that to be eligible for benefits under the Special Indemnity Fund, the preexisting disability plus the new disability must exceed seventeen percent of the body. In addition, new wording was adopted to restate the old principle which said a claimant must have been a physically impaired person at the time of the recent injury.[9] The controversy arising here is simply that the definition may now be more restricted than it was previously. As an example, there is now no specific mention of coverage for preexisting military or Veteran Administration disabilities. It is the writer's assumption that the broad coverage of worker's compensation and special indemnity legislation would not be limited by this language and represents a simplification in verbiage but not a restriction in coverage.

Conclusion

A worker's compensation system is a multifaceted system with certain advantages and disadvantages for all parties involved. Nevertheless, it does provide benefits to injured workers under a system that is reasonably efficient and effective. It is apparent, by looking at the historical aspects, that the development of a worker's compensation system is dependent upon legal concepts, economic factors, and other sociopolitical influences which may exist in the state, nation, or world. This system depends in part upon physicians working effectively within the system to represent their patients and assist them in receiving the proper benefits due them under the law.

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The Author

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News from
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Breastfeeding

The Oklahoma State Department of Health encourages activities which promote and protect the health of all of Oklahoma's children.

With all its immunological benefits, breastfeeding has been shown to be a significant preventive factor against a variety of potentially serious infant illnesses and infant mortality.

As a physiologic component of the reproductive cycle, breastfeeding enhances the development of strong emotional bonds between infants and their mothers. Breastfeeding also provides its particular benefits at a low cost.

When parents are provided breastfeeding information, they can make informed choices regarding a method of infant feeding. By enhancing and altering factors which encourage breastfeeding, the incidence and duration of breastfeeding can be increased.

The state health department believes barriers in hospitals and clinics which inhibit the initiation and continuation of breastfeeding should be identified and altered. All health professionals should identify and reduce all barriers that may exist. Breastfeeding should be integrated into the continuum of health care, and health care professionals should receive adequate basic and ongoing theoretical and practical training in breastfeeding.

For more information regarding the Oklahoma State Department of Health's breastfeeding initiative, contact the Nutrition Division, 405/271-4676.

DISEASE	Monthly Reporting Period Ending 12/31/88	TOTAL TO DATE		
		This Year	Last Year	5 Yr. Avg.
ACQUIRED IMMUNE DEFICIENCY SYNDROME	23	162	117	74
CAMPYLOBACTER INFECTIONS	9	201	251	244
CHLAMYDIA INFECTIONS	455	2776	#	#
ENCEPHALITIS, INFECTIOUS	2	10	28	27
GIARDIA INFECTIONS	41	251	207	283
GONORRHEA (Use ODH Form 228)	574	7411	9657	12679
HAEMOPHILUS INFLUENZAE INVASIVE DISEASE	29	210	233	228
HEPATITIS A	41	519	334	503
HEPATITIS B	27	195	250	256
HEPATITIS, NON-A NON-B	1	43	52	60
HEPATITIS UNSPECIFIED	9	36	38	100
HUMAN IMMUNODEFICIENCY VIRUS INFECTIONS	32	*	*	*
MENINGITIS, BACTERIAL (non-meningococcal, non H. Influenzae)	1	17	36	61
MENINGOCOCCAL INFECTIONS	5	24	35	31
MUMPS	13	—	—	—
PERTUSSIS	7	70	172	221
RABIES (ANIMAL)	4	37	35	84
ROCKY MOUNTAIN SPOTTED FEVER	4	94	84	124
SALMONELLA INFECTIONS	38	469	456	485
SHIGELLA INFECTIONS	17	217	156	225
SYPHILIS (Use ODH Form 228)	6	149	187	195
TUBERCULOSIS	18	239	251	255
TULAREMIA	0	16	26	23

#Made Reportable in 1985 —Made Reportable in 1987 *Made Reportable in 1988

Injuries	Total to Date This Year	Fatalities No. (%)
BURN	681	120 (18)
TRAUMATIC SPINAL CORD INJ	132	29 (22)
DROWNING/ NEAR DROWNING	114	90 (79)

Diseases of Low Frequency	Total to Date This Year
AMEBIASIS	5
BRUCELLOSIS	2
LEGIONNAIRES' DISEASE	18
MALARIA	11
MEASLES (RUBEOLA)	8
REYE SYNDROME	0
RUBELLA	1
TETANUS	1
TOXIC SHOCK SYNDROME	11
TYPHOID FEVER	0

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Of thirteen Loss Prevention Seminars scheduled by the Physicians Liability Insurance Company (PLICO) and the Oklahoma State Medical Association (OSMA) for 1989, nine remain at press time; the last is on May 6. Additional seminars, if planned, will be listed in the PLICO and/or OSMA newsletters.

Physicians insured by PLICO are required to attend one of these seminars every three years in order to maintain their coverage. Newly insured physicians are required to attend during their first calendar year of coverage.

Notices were mailed in January to those physicians who must attend in 1989, and registration is now underway. While registration at the door will be permitted, advance sign-up is encouraged. There is no charge for a PLICO/OSMA Loss Prevention Seminar, and no meals will be served.

Seminars remaining in March and April are evening programs (6 PM to 9 PM).

In March: **Muskogee**, Tuesday, March 21, Holiday Inn, 800 South 32nd; **Enid**, Tuesday, March 28, Ramada Inn, 3005 West Garriott Road; **Lawton**, Thursday, March 30, Howard Johnson's, 1125 East Gore Boulevard.

In April: **Oklahoma City**, Thursday, April 6, Metro Tech, Northeast 38th and Martin Luther King Boulevard; **Shangri-La Resort**, Tuesday, April 11, Grand Lake near Afton; **Bartlesville**, Thursday, April 13, Park Inn, 222 Southeast Washington Boulevard; **Woodward**, Thursday, April 27, Northwest Inn, Highway 270 and First Street; **Guymon**, Friday, April 28, Best Western-Ambassador, Highways 64 and 3 at 21st Street.

An afternoon seminar will be held from 1 PM to 4 PM, Saturday, May 6, in **Tulsa** in conjunction with the OSMA Annual Meeting at the Sheraton Kensington Hotel.

For registration information, contact Debbie Hinson at the OSMA office, 1-800-522-9452 or (405) 843-9571.

Eight from Tulsa

Trustees meet in Oklahoma City, approve Life Memberships

At their February 5 meeting in Oklahoma City, the Oklahoma State Medical Association Board of Trustees approved Life Memberships for the following Oklahoma physicians:

George F. McDonnold, MD, N.L. (Bill) Shadid, MD, James P. Luton, MD, Lynn H. Harrison, MD, and G. Sam Collins, MD, Oklahoma City; and Leonard L. Kishner, MD, Houston F. Mount, MD, James H. Rollins, MD, Theodore R. Wenger, MD, Frederick S. Wetzel, Jr., MD, Robert B. Williams, MD, Warren G. Gwartney, MD, and Jed E. Goldberg, MD, Tulsa.

From Muskogee are Marvin H. Hird, MD, Emil F. Stratton, MD, and Charles G. Fullenwider, MD; and from Lawton, Charles S. Graybill, MD, and John N. Penrod, MD.

Also awarded Life Memberships were George C. Moore, MD, Ponca City; Robert S. Davis, Jr., MD, Chickasha; Edward K. Norfleet, MD, Vinita; Arvin Craig Roberson, MD, Anadarko; Tom C. Sparks, MD, Ardmore; William K. Walker, MD, Marlow; Cooper D. Ray, MD, Altus; and J.D. McGovern, MD, Norman.

To be eligible for Life Membership, a doctor must meet one or more of the following qualifications: (a) Retired from active practice of medicine due to ill health or age; (b) Engaged in the active practice of medicine for 50 years or more; (c) Attained the age of 70 years.

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Smith's The Critically Ill Child: Diagnosis and Medical Management, Edition 3. Edited by Joseph D. Dickerman and Jerold F. Lucey. Philadelphia: W.B. Saunders Co., 1985. Pp 352, price not given.

The first edition of this book appeared in 1972. Its usefulness was quickly established, and the second edition appeared in 1977. This, the third edition, attests to the value of its predecessors. It differs significantly in content and in form from the two previous editions.

The most common pediatric medical emergencies are discussed in depth with respect to pathophysiology, diagnosis, and management. In addition, flow diagrams or algorithms are presented to assist interpretation of diagnosis and treatment. The book is divided into 16 chapters prepared by experts concerning the topics covered. A listing of some of the topics underlines the practical importance of the subjects chosen: epiglottitis and severe croup, acute bacterial meningitis, endotoxin shock, severe dehydration, drowning, Reye syndrome, diagnosis and management of the comatose child, head injury, cardiac arrhythmias, status asthmaticus, renal failure, and congestive heart failure.

Pediatricians responsible for the care of critically ill children will find this a very useful book.

—Harris D. Riley, Jr., MD
Oklahoma City

Iwo Jima: Legacy of Valor. By Bill D. Ross. New York: Vanguard Press, 1985. Pp XV, 376, illustrated, maps. Price not given.

Iwo Jima: Legacy of Valor chronicles in a day-by-day fashion the bloody battle of Iwo Jima in World War II. Iwo Jima (Sulfuric Island) is a small island in the Bonin chain of volcanic islands which lies about 650 miles almost due south of Tokyo Bay. Although it measures only 5 miles by 2.5 miles in size, it occupied a strategic position because of its proximity to the Japanese homeland. It was midway from the Marianas to Japan and was desperately needed for a landing base by B-29s on bomb runs against Japan. Because of its strategic location, it was considered almost a suburb of the Japanese homeland. One of the crack Japanese generals, Lieutenant General Tadamichi Kuribayashi, had been placed in command of Iwo Jima's defenses. He had constructed what proved to be an almost impenetrable system of fortifications on the island.

On February 19, 1945, 75,000 United States Marines from the Fourth and Fifth divisions, with the Third Marine Division in reserve, invaded Iwo Jima. This book tells the daily story of the deadly battle during its 36 days against the fanatical Japanese forces defending to the last man the front door to their homeland. It was the scene of one of the bloodiest of all battles of World War II. Casualties were appalling; 25,852 Americans were casualties; of those, 6,821 were killed. Of Japan's estimated 21,000 troops defending the island, slightly more than 1,000 were taken prisoner and the rest died.

Certain statistics drive home the deadliness of the battle. At the end of the sixth day of the invasion, more than 9,000 marines had been killed or wounded or were missing in action. In the period after the first wave of troops had hit the beaches, a man had fallen every 50 seconds. During the first three weeks of the battle, more than 1,000 marines a day fell dead or wounded in the field.

By the end of the battle, nearly 30% of all the marines who landed on Iwo Jima were casualties. But the average loss of assault units, the troops who fought on the front, was nearly 60%. More than twice as many United States Marines died in the battle of

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Iwo Jima than died in all of the First World War. Each square mile of the eight-square-mile island cost the United States 695 American lives. And when Japanese losses are added to those of the marines, the cost was more than 3,200 dead per square mile. These figures are more meaningful when one realizes that the population density of the United States averages only 50.5 inhabitants per square mile.

Bill D. Ross, the author of this book, was a 23-year-old marine sergeant and a member of the Third Marine Division. He saw action on Iwo Jima as a combat correspondent. He has painted a highly realistic narrative, giving a detailed account of this terrible battle. It is filled with the heroism and patriotism of war along with its horror.

In the entire course of the five years of World War II, both in the Pacific and in Europe, only 353 Congressional Medals of Honor, the nation's highest award for heroism, were given. In just a little more than a month, 27 of these were earned by men fighting on Iwo Jima.

The book tells us about why the battle was fought, how it was fought, the conflict among the top brass of the US Armed Forces, and the importance of the battle.

The book is complimented by excellent, official US Marine Corps photographs and a comprehensive index.

The battle of Iwo Jima was unique. It is vividly captured in this book, which is strongly recommended as a definitive account of the battle.

—Harris D. Riley, Jr., MD
Oklahoma City

Surgeon on Iwo: Up Front with the 27th Marines. By James S. Vedder. Novato, CA: Presidio Press, 1984. Pp 226, $15.95.

Surgeon on Iwo is the story of a medical officer during the invasion and battle of Iwo Jima.

James S. Vedder, MD, then a 33-year-old lieutenant commander in the US Navy, was a medical officer in the Third Battalion, Twenty-Seventh Regiment of the Fifth Marine Division. This book describes his experiences as the chief medical officer of his unit in the deadly battle from the invasion on February 19, 1945, through the entire 36-day battle.

Vedder had an assistant battalion surgeon, approximately 50 navy corpsmen and 16 marine litter bearers under his immediate command. The men of the battalion medical unit shared all of the hardships and hazards of the assaulting marines; they gave immediate treatment to casualties on the front line, and the aid station was never more than 200 to 300 yards from the center of the action. The author repeatedly praises the courage of the marine litter bearers, who held one of the most hazardous jobs in the invasion force. The book gives from the author's vantage point a day-by-day account of the campaign, from the division's departure from Hawaii on December 30, 1944, to its evacuation in late March, 1945.

This book depicts in dramatic fashion the hazards faced by a medical officer and his staff in the front lines during an amphibious invasion and the subsequent island battle. It is a gripping account, telling vividly of the fanaticism of the Japanese defenders and of the dangers confronting a medical

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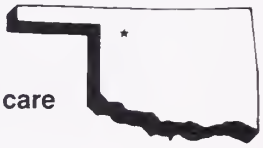

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officer in combat. The Twenty-Seventh Regiment was so badly shattered that it ceased to exist; fewer than 500 troops remained of the approximately 3,000 on the roster on D-day. Of the 963 men of the Third Battalion who landed on February 19, some 700 were casualties. One of the corpsmen of Vedder's unit received the Congressional Medal of Honor posthumously. The author himself was awarded the Silver Star.

One wishes that Dr Vedder had told more about himself. Where did he attend medical school? Where did he train? What about his family? Where does he reside? I decided to find out. I telephoned Dr Vedder. He is a graduate of Northwestern Medical School, trained in pediatrics at Children's Memorial Hospital in Chicago and at the University of Wisconsin, and is a practicing pediatrician in Wisconsin. He informed me that he began writing the book in 1946 while completing his residency in pediatrics. However, the subject was too painful, and he opted to prepare at that time a detailed outline of his experience on a day-to-day basis. After 35 years, he filled in the spaces and constructed a most interesting narrative.

There are only minor criticisms of this book. In places the dialogue seems somewhat contrived and stilted. Undoubtedly this is the result of efforts to reconstruct conversations that took place some 40 years earlier. The caption of at least one photograph differs from that appearing in other books on the battle, and that of one map appears to be erroneous.

This is a dramatic account of the heroism of navy corpsmen, navy medical officers, and marines in one of the bloodiest battles of World War II.

—Harris D. Riley, Jr., MD
Oklahoma City

(continued)

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CALL FOR RESOLUTIONS

All resolutions to be presented to the Oklahoma State Medical Association House of Delegates Annual Meeting must be received in the executive offices no later than thirty (30) days prior to the meeting. This year's meeting will be held May 4-6, 1989, at the Sheraton Kensington Hotel, Tulsa, Oklahoma.

County medical societies or individuals wishing to submit resolutions should mail them to OSMA, 601 Northwest Expressway, Oklahoma City, OK 73118. Should you need assistance in drafting such resolutions, please contact the executive offices.

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Oklahoma Ornithology: An Annotated Bibliography. By Joseph A. Grzybowski and Gary D. Schnell. Norman: University of Oklahoma Press, 1984. Pp 175, hardback, $19.95.

Distributions of Oklahoma Birds. By D. Scott Wood and Gary D. Schnell. Norman: University of Oklahoma Press, 1984. Pp 209, illustrated, paperback, $14.95.

These two books, both Stovall Museum publications, are for the dedicated ornithologist. *Oklahoma Ornithology* lists almost 1,600 references about Oklahoma birds. The information is derived from major ornithological, conservation, and wildlife journals; reports from wildlife departments; and dissertations. Each reference provides the name of the author or editor, the title of the article or book, and name of the publisher and the date of publication. A brief note describes the contents of each reference. The references cover all aspects of the ecology of birds. Several indices make easier the use of material in the book. It is the only comprehensive listing of publications about the birds of the state to be published in more than 40 years.

Distributions of Oklahoma Birds provides an analysis and summary of more than 14,000 sight and specimen records of birds in Oklahoma in an attractive paperback book. The geographic ranges of some 380 Oklahoma bird specimens are depicted on outline maps of the state showing the 77 counties. The common and scientific names of the species are included. A bar graph under each map and a brief code indicates the status of each species with regard to residence, season, migration, and abundance.

Each of these books is well bound, has an attractive cover, and represents an important addition to the library of the serious bird enthusiast.

—Harris D. Riley, Jr., MD
Oklahoma City

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83rd ANNUAL MEETING

at the

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MAY 4 through 6, 1989

Opening Session: 9 a.m., Friday, May 5
Closing Session: 9 a.m., Saturday, May 6

All members, delegates, alternate delegates, and county society officials are encouraged and urged to attend. Business to be brought before the House of Delegates must be submitted by April 5, 1989. All items of business will be debated in open reference committee hearings on May 5, 1989.

Any member of the association may submit business for consideration by the House of Delegates. For help in preparing information for submission, please contact OSMA headquarters, 601 Northwest Expressway, Oklahoma City, Oklahoma 73118, 405-843-9571 or 1-800-522-9452.

Larry Long, MD
Speaker of the House

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DEATHS

Charles Nathaniel Atkins, MD
1911 - 1988

Charles N. Atkins, MD, died December 28, 1988, in Oklahoma City. A 1950 graduate of Meharry Medical College, Nashville, Tenn, Dr Atkins was a clinical professor of family practice, community medicine, and dentistry at the University of Oklahoma Health Sciences Center from 1973 to 1987. His numerous professional and civic activities included the presidencies of the Oklahoma Academy of Family Physicians and the American Heart Association, Oklahoma Affiliate.

Michael W. Brown, MD
1936 - 1988

Radiologist Michael W. Brown, MD, Ardmore, died December 25, 1988. A native of Ardmore, Dr Brown earned his medical degree at Washington University School of Medicine, St Louis, in 1962. He was on active duty with the US Navy for two years, and after a year of medical practice in St Louis, returned to Ardmore.

Loyd Lee Long, Jr., MD
1922 - 1988

OSMA Life Member Loyd L. Long, Jr., MD, a retired obstetrician/gynecologist, died in Ardmore December 6, 1988. A 1948 alumnus of the University of Oklahoma School of Medicine, Dr Long was born in Ardmore in 1922. During World War II he served with the US Air Force for two years, attaining the rank of captain. He returned to Ardmore in 1949 to establish a medical practice.

Lyman Cunningham Veazey, MD
1904 - 1988

Retired Ardmore internist and surgeon Lyman C. Veazey, MD, died November 11, 1988. Dr Veazey, a native of Van Alstyne, Tex, was graduated from the University of Texas Medical Branch, Galveston, in 1932 and began his practice in Ardmore the following year. A Life Member of the OSMA, he served in the US Air Force during World War II, attaining the rank of major.

French LaZelle Worthen, MD
1926 - 1988

Lawton family practitioner French L. Worthen, MD, died December 28, 1988. Dr Worthen was born in Vinson, Okla, and graduated from the University of Oklahoma School of Medicine in 1958. He established his medical practice in Lawton in 1960.

IN MEMORIAM

1988

Charles Stewart Cunningham, MD	January 1
Charles Wallace Coyner, MD	January 4
Glen Franklin Wade, MD	January 12
Newman Sanford Matthews, MD	January 12
Frank Cornwell Lattimore, MD	January 30
Leo Lowbeer, MD	February 3
Joseph Norman Kramer, MD	February 16
Eugene Richard Flock, MD	February 17
Jay P. Irby, MD	February 25
James William Finch, MD	March 4
John Junior Donnell, MD	March 7
Douglas Earl Wilson, MD	March 29
Tony Willard Pratt, MD	April 21
James Park Dewar, Jr., MD	May 5
Hugh Albert Stout, MD	May 7
William Claude McCurdy, Jr., MD	May 22
James Robert Carroll, MD	May 28
Dean Crittenden Walker, MD	June 11
Vernon Dean Cushing, MD	June 19
James Breese Darrough, MD	June 29
Paul Thurston Powell, MD	July 1
Jack Burgess Tolbert, MD	July 12
John Ralph Rafter, MD	August 1
Luther Harrison Becker, MD	August 9
Clemens Maximilian Hartig, MD	August 27
John Copeland Pickard, MD	August 31
Peter A. MacKercher, MD	September 17
Haskell Smith, MD	September 27
William Eldon Wendel, MD	October 5
Tullos Oswell Coston, MD	October 21
Frank Herbert Austin, MD	November 11
Lyman Cunningham Veazey, MD	November 11
Loyd Lee Long, Jr., MD	December 6
Michael W. Brown, MD	December 25
Charles Nathaniel Atkins, MD	December 28
French LaZelle Worthen, MD	December 28

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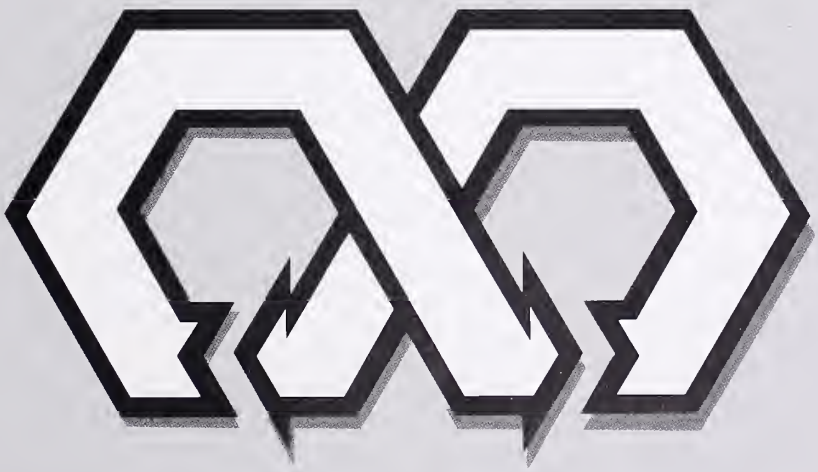

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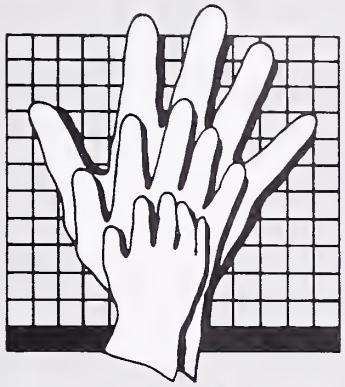

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All manuscripts should adhere to the style adopted by the American Medical Association as illustrated in *JAMA* and detailed in the AMA's *Manual for Authors & Editors*. Footnotes, bibliographies, and legends for illustrations should be typewritten, double-spaced, on separate sheets. References are to be listed in the order of their appearance in the article.

Illustrations

Illustrations other than the author's will not be accepted for publication unless accompanied by written permission from the original source. Illustrations should be labeled with the author's name and must be numbered in the order in which they are referred to in the article. The quality of all illustrations must be in keeping with the quality of the magazine.

News

Readers are encouraged to submit news items of interest to Oklahoma physicians. Where dates of meetings, etc, are important, please remember that each issue closes on the first day of the *preceding* month and reaches subscribers in the latter half of the month of publication.

Reprints

Authors will receive reprint order forms from the Transcript Press, 222 East Eufaula, Norman, Oklahoma 73069, prior to publication of their articles. Other requests for reprints must be made to the Transcript Press within 30 days after publication.

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The Spirit of Doctors' Day

Doctors' Day will be observed across this nation on March 30th. This celebration has been an integral part of the Southern Medical Association Auxiliary's program for fifty-six years. The conception of Doctors' Day was first visualized due to the deep love, respect, and admiration of a medical auxilian for her husband, a doctor. More than a half-century later, medical auxiliaries continue to sponsor the observance of this commemoration in the same spirit of love, respect, and admiration.

Mrs Eudora Almond suggested in 1932 to her Barrow County (Georgia) Medical Society Auxiliary that doctors be honored at an annual celebration. Mrs Almond chose March 30th as the official day to honor doctors everywhere since it was on that date in 1842 that Dr Crawford Long of Jefferson, Georgia, became the first physician in history to use ether in surgery.

The red carnation has become the traditional symbol of Doctors' Day. The red color is said to denote love, charity, sacrifice, bravery, and courage. The unique character of the doctor-patient relationship requires that the doctor possess these qualities. Doctors are often presented red carnations by auxilians or hospitals to be worn on lapels as appropriate, well-deserved symbols of Doctors' Day.

Doctors' Day gives auxilians the opportunity to express and involve the community in an expression of appreciation for the medical profession's dedication to many high ideals including commitment to ongoing academic excellence, delivery of high quality health care in spite of many obstacles and challenges, and untiring concern for others. The doctor is expected by our society to expose himself to disease, staggering amounts of stress, and often unsubstantiated criticism. Doctors' Day is a time to emphasize that contributions by the medical profession have not gone unnoticed at home or in the community.

The primary objective of Doctors' Day can be achieved by promotion of some act of generosity, a gift, or tribute in honor of the medical profession. Past projects have included community service programs, health fairs, blood drives, and symposiums. Providing refreshments and banquets to honor local doctors are activities auxiliaries and hospitals have especially enjoyed. Auxilians in Oklahoma have become more creative each year in celebrating Doctors' Day and involving their communities.

Since the first Doctors' Day, there has been an immense expansion of knowledge and technology which greatly affects the delivery of health care. The lives of doctors and their families have changed in many ways. However, the eagerness to express sincere appreciation fostered by true knowledge of a physician spouse's dedication and accomplishment has remained constant over the last half-century. May all practitioners of the medical profession discern the inspiring beauty of the red carnation and accept the genuine spirit of Doctors' Day this year.

—Hope Dilling
OSMAA State Chairman

■ **Ray V. McIntyre, MD, a family practitioner in** Kingfisher and current president of the Oklahoma State Medical Association (OSMA), has been appointed editor-in-chief of the JOURNAL; he succeeds Mark R. Johnson, MD, who announced his retirement from the Editorial Board last spring.
Dr McIntyre was named to the post by the OSMA Board of Trustees at their February 5 meeting in Oklahoma City; he will assume his new duties in May 1989 after completing his presidency. In related action, the board appointed Robert L. Scott, MD, a Tulsa internist, to fill the unexpired term of editor Donald L. Brawner, MD, who announced his retirement in January. Reappointed was editor Harris D. Riley, Jr., MD, Oklahoma City. Members of the JOURNAL's Editorial Board serve rotating three-year appointments.

■ **William F. Barnes, MD, has been awarded the** 1988 Blesh-Rucks Award from the Oklahoma City Clinic. The award is given annually to that physician in the clinic who exhibits excellence in clinical practice. Dr Barnes, who joined the clinic in 1978, is chairman of the clinic's urology department and medical director of its sexual health center. He is also a clinical assistant professor at the University of Oklahoma College of Medicine. The award is named in honor of the clinic's founders, Drs Abraham L. Blesh and William W. Rucks.

■ **A booklet entitled "HIV Blood Test and Coun**seling: AMA Physician Guidelines" is now available from the American Medical Association. It contains information on serologic tests, indications for testing, pretest procedures, posttest counseling, and relevant AMA policies. The booklets are $2 each, with a minimum order of five copies required. Send a check with each order to: American Medical Association, Division of Health Science, 535 North Dearborn, Chicago, IL 60610.

■ **People born to parents of advanced age may** be at higher risk of developing Alzheimer's disease later in life, a study in January's *Archives of Neurology* suggests. The study, by Katsuya Urakami, MD, and colleagues at the Tottori University School of Medicine, Yonago, Japan, involved 77 Alzheimer's patients; 52 patients with a different type of dementia, multi-infarct dementia, or MID, which is caused by small strokes; and 91 controls. The authors then looked at how old the study subjects' parents were when the subjects were born. Those mean maternal and paternal ages were significantly higher in the case of the Alzheimer's patients than for the MID patients or the controls, the researchers say. "This study suggests that advanced age may become a cause of chromosomal abnormality, and advanced parental age at subjects' birth may be a possible risk factor in developing (Alzheimer's disease)," the authors conclude.

■ **American Medical Association Trustee Jerry** Schenken, MD, a Nebraska physician, was the featured speaker March 8 at the OSMA's Medicine Day at the State Capitol. Dr Schenken is well known in Washington, testifying regularly before Congress on behalf of organized medicine; he has also appeared on network television. In November he lost a close, hard-fought congressional race, but gained considerable understanding of the political arena. He shared this insight with Medicine Day participants, explaining why he feels it is to important for physicians to be involved in the legislative process.

■ **Dues statements for OMPAC, the Oklahoma** Medical Political Action Committee, were mailed in late January. In the accompanying letter, OMPAC chairman Larry L. Long, MD, urges his colleagues to support OMPAC and help make a difference in upcoming elections for United States Senator, Governor, Lieutenant Governor, and Insurance Commissioner, as well as 101 seats in the House and 24 in the Senate. He points out that OMPAC is "taking careful note of those elected officials who are pushing mandatory assignment, not to mention chiropractor prescribing legislation." Dues and contributions, in the form of personal checks, should be mailed to OMPAC, PO Box 54520, Oklahoma City OK 73154.

■ **Physicians are reminded that, through the** OSMA's Doctor of the Day program, they can contribute their time and professional expertise at the state capitol aid station. The OSMA extends its appreciation to the following January volunteers: John R. Alexander, MD, Edward Tomsovic, MD, and Lee Schoeffler, MD, Tulsa; Ray V. McIntyre, MD, and Carroll Hosted, MD, Kingfisher; Alice Gambill, MD, and Donald Cooper, MD, Stillwater; Shyamkant Kulkarni, MD, Watonga; Raphael D'Angelo, MD, Morris; John Hill, MD, Fletcher; Leslie Arneson, MD, Edmond; Elvin Amen, MD, Bartlesville; Ron Sanders, MD, Perkins; William Mast, MD, Broken Arrow; William Bernhardt, MD, Midwest City; and James Williams, Checotah.

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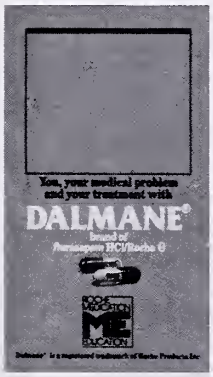

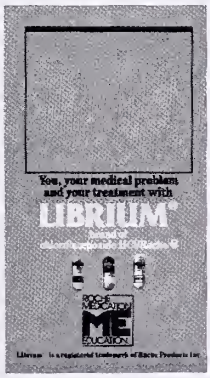

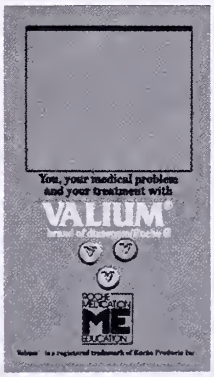

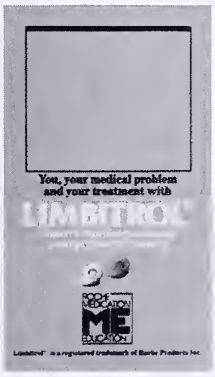

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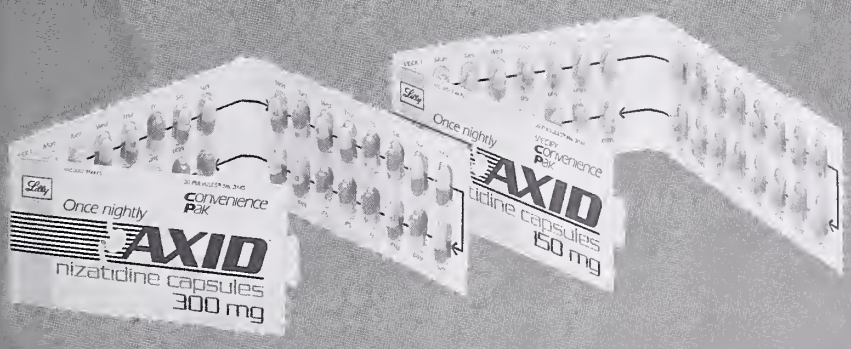

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Contraindication: Axid is contraindicated in patients with known hypersensitivity to the drug and should be used with caution in patients with hypersensitivity to other H_2-receptor antagonists.

Precautions: *General* — 1. Symptomatic response to nizatidine therapy does not preclude the presence of gastric malignancy.

2. Because nizatidine is excreted primarily by the kidney, dosage should be reduced in patients with moderate to severe renal insufficiency.

3. Pharmacokinetic studies in patients with hepatorenal syndrome have not been done. Part of the dose of nizatidine is metabolized in the liver. In patients with normal renal function and uncomplicated hepatic dysfunction, the disposition of nizatidine is similar to that in normal subjects.

Laboratory Tests — False-positive tests for urobilinogen with Multistix® may occur during therapy with nizatidine.

Drug Interactions — No interactions have been observed between Axid and theophylline, chlordiazepoxide, lorazepam, lidocaine, phenytoin, and warfarin. Axid does not inhibit the cytochrome P-450-linked drug-metabolizing enzyme system; therefore, drug interactions mediated by inhibition of hepatic metabolism are not expected to occur. In patients given very high doses (3,900 mg) of aspirin daily, increases in serum salicylate levels were seen when nizatidine, 150 mg b.i.d., was administered concurrently.

Carcinogenesis, Mutagenesis, Impairment of Fertility — A two-year oral carcinogenicity study in rats with doses as high as 500 mg/kg/day (about 80 times the recommended daily therapeutic dose) showed no evidence of a carcinogenic effect. There was a dose-related increase in the density of enterochromaffin-like (ECL) cells in the gastric oxyntic mucosa. In a two-year study in mice, there was no evidence of a carcinogenic effect in male mice, although hyperplastic nodules of the liver were increased in the high-dose males as compared with placebo. Female mice given the high dose of Axid (2,000 mg/kg/day, about 330 times the human dose) showed marginally statistically significant increases in hepatic carcinoma and hepatic nodular hyperplasia with no numerical increase seen in any of the other dose groups. The rate of hepatic carcinoma in the high-dose animals was within the historical control limits seen for the strain of mice used. The female mice were given a dose larger than the maximum tolerated dose, as indicated by excessive (30%) weight decrement as compared with concurrent controls and evidence of mild liver injury (transaminase elevations). The occurrence of a marginal finding at high dose only in animals given an excessive and somewhat hepatotoxic dose, with no evidence of a carcinogenic effect in rats, male mice, and female mice (given up to 360 mg/kg/day, about 60 times the human dose), and a negative mutagenicity battery are not considered evidence of a carcinogenic potential for Axid.

Axid was not mutagenic in a battery of tests performed to evaluate its potential genetic toxicity, including bacterial mutation tests, unscheduled DNA synthesis, sister chromatid exchange, mouse lymphoma assay, chromosome aberration tests, and a micronucleus test.

In a two-generation, perinatal and posthatal fertility study in rats, doses of nizatidine up to 650 mg/kg/day produced no adverse effects on the reproductive performance of parental animals or their progeny.

Pregnancy — Teratogenic Effects — Pregnancy Category C — Oral reproduction studies in rats at doses up to 300 times the human dose and in Dutch Belted rabbits at doses up to 55 times the human dose revealed no evidence of impaired fertility or teratogenic effect, but, at a dose equivalent to 300 times the human dose, treated rabbits had abortions, decreased number of live fetuses, and depressed fetal weights. On intravenous administration to pregnant New Zealand White rabbits, nizatidine at 20 mg/kg produced cardiac enlargement, coarctation of the aortic arch, and cutaneous edema in one fetus and at 50 mg/kg it produced ventricular anomaly, distended abdomen, spina bifida, hydrocephaly, and enlarged heart in one fetus. There are, however, no adequate and well-controlled studies in pregnant women. It is also not known whether nizatidine can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. Nizatidine should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers — Studies conducted in lactating women have shown that <0.1% of the administered oral dose of nizatidine is secreted in human milk in proportion to plasma concentrations. Caution should be exercised when administering nizatidine to a nursing mother.

Pediatric Use — Safety and effectiveness in children have not been established.

Use in Elderly Patients — Ulcer healing rates in elderly patients are similar to those in younger age groups. The incidence rates of adverse events and laboratory test abnormalities are also similar to those seen in other age groups. Age alone may not be an important factor in the disposition of nizatidine. Elderly patients may have reduced renal function.

Adverse Reactions: Clinical trials of nizatidine included almost 5,000 patients given nizatidine in studies of varying durations. Domestic placebo-controlled trials included over 1,900 patients given nizatidine and over 1,300 given placebo. Among reported adverse events in the domestic placebo-controlled trials, sweating (1% vs 0.2%), urticaria (0.5% vs < 0.01%), and somnolence (2.4% vs 1.3%) were significantly more common in the nizatidine group. A variety of less common events was also reported; it was not possible to determine whether these were caused by nizatidine.

Hepatic — Hepatocellular injury, evidenced by elevated liver enzyme tests (SGOT [AST], SGPT [ALT], or alkaline phosphatase), occurred in some patients and was possibly or probably related to nizatidine. In some cases, there was marked elevation of SGOT, SGPT enzymes (greater than 500 IU/L) and, in a single instance, SGPT was greater than 2,000 IU/L. The overall rate of occurrences of elevated liver enzymes and elevations to three times the upper limit of normal, however, did not significantly differ from the rate of liver enzyme abnormalities in placebo-treated patients. All abnormalities were reversible after discontinuation of Axid.

Cardiovascular — In clinical pharmacology studies, short episodes of asymptomatic ventricular tachycardia occurred in two individuals administered Axid and in three untreated subjects.

CNS — Rare cases of reversible mental confusion have been reported.

Endocrine — Clinical pharmacology studies and controlled clinical trials showed no evidence of antiandrogenic activity due to Axid. Impotence and decreased libido were reported with equal frequency by patients who received Axid and by those given placebo. Rare reports of gynecomastia occurred.

Hematologic — Fatal thrombocytopenia was reported in a patient who was treated with Axid and another H_2-receptor antagonist. On previous occasions, this patient had experienced thrombocytopenia while taking other drugs. Rare cases of thrombocytopenic purpura have been reported.

Integumental — Sweating and urticaria were reported significantly more frequently in nizatidine- than in placebo-treated patients. Rash and exfoliative dermatitis were also reported.

Hypersensitivity — As with other H_2-receptor antagonists, rare cases of anaphylaxis following administration of nizatidine have been reported. Because cross-sensitivity in this class of compounds has been observed, H_2-receptor antagonists should not be administered to individuals with a history of previous hypersensitivity to these agents. Rare episodes of hypersensitivity reactions (eg, bronchospasm, laryngeal edema, rash, and eosinophilia) have been reported.

Other — Hyperuricemia unassociated with gout or nephrolithiasis was reported. Eosinophilia, fever, and nausea related to nizatidine administration have been reported.

Overdosage: Overdoses of Axid have been reported rarely. The following is provided to serve as a guide should such an overdose be encountered.

Signs and Symptoms — There is little clinical experience with overdosage of Axid in humans. Test animals that received large doses of nizatidine have exhibited cholinergic-type effects, including lacrimation, salivation, emesis, miosis, and diarrhea. Single oral doses of 800 mg/kg in dogs and of 1,200 mg/kg in monkeys were not lethal. Intravenous median lethal doses in the rat and mouse were 301 mg/kg and 232 mg/kg respectively.

Treatment — To obtain up-to-date information about the treatment of overdose, a good resource is your certified regional Poison Control Center. Telephone numbers of certified poison control centers are listed in the *Physicians' Desk Reference (PDR)*. In managing overdosage, consider the possibility of multiple drug overdoses, interaction among drugs, and unusual drug kinetics in your patient.

If overdosage occurs, use of activated charcoal, emesis, or lavage should be considered along with clinical monitoring and supportive therapy. Renal dialysis for four to six hours increased plasma clearance.

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Story on page 173.
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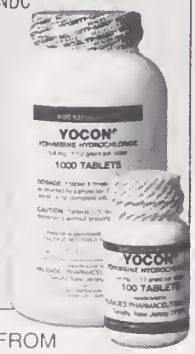

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Pregnancy: Teratogenic effects. Pregnancy Category B. Teratogenicity studies have been performed in mice, rats, and rabbits at doses up to 50 times the human dose and have revealed no evidence of harm to the fetus due to sucralfate. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when sucralfate is administered to a nursing woman.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS
Adverse reactions to sucralfate in clinical trials were minor and only rarely led to discontinuation of the drug. In studies involving over 2,500 patients treated with sucralfate, adverse effects were reported in 121 (4.7%).

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OVERDOSAGE
There is no experience in humans with overdosage. Acute oral toxicity studies in animals, however, using doses up to 12 gm/kg body weight, could not find a lethal dose. Risks associated with overdosage should, therefore, be minimal.

DOSAGE AND ADMINISTRATION
The recommended adult oral dosage for duodenal ulcer is 1 gm four times a day on an empty stomach.

Antacids may be prescribed as needed for relief of pain but should not be taken within one-half hour before or after sucralfate.

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1. Eliakim R, Ophir M, Rachmilewitz D: *J Clin Gastroenterol* 1987;9(4):395-399.

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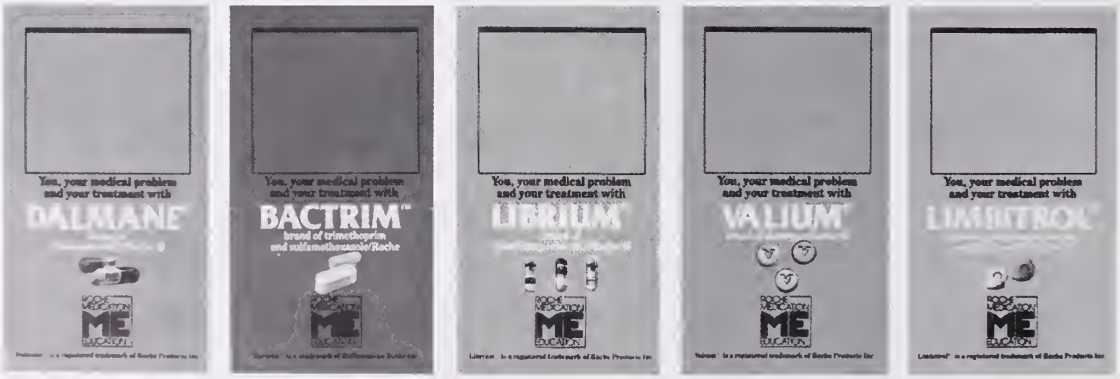

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Hucksters and Hustling

As the real income of the average practicing physician declines and as most of us are working harder and longer to pay our bills, we are increasingly vulnerable to an army of hustlers who call themselves "marketing consultants," "management experts," even "reimbursement specialists." Their bait is the promise of increasing our income by extracting the "maximum payments" from third party payors. Of course they can do this without increasing our workload, our number of patients, or our overhead.

Like all bait that looks too good to be true, it isn't. Usually the offerings are, in essence, guides to extortion and fraud, step by step outlines of methods to deceive and misrepresent.

Certainly not all such hucksters encourage or even suggest misrepresentation as a means to greater prosperity, but there are enough of them who do to justify skeptical wariness on our part.

Unfortunately, the prevailing system of reimbursement for most physicians' services is, today, grossly unfair, inequitable, and totally irrational. Because of this, our frustration and resentment make us easy prey for these hustlers who feed our anger with feigned sympathy and hollow compassion. Then, tempted by outrage, many of us agree to rationalize dishonesty, compromise ethics, and take the bait.

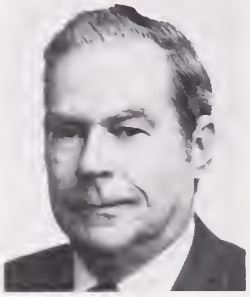
We do what the hucksters and hustlers tell us to do. We do things to patients *only* because we will be paid for doing them, not because they will benefit the patients. We misrepresent the complexity of services we render and the time devoted to delivering those services. Occasionally the total treatment plan for a patient will be designated not by the clinical presentation but by the reimbursement prospects of the case. All, of course, mapped out in detail and presented to us by the marketing and management hucksters who specialize in beautiful bait and bad advice.

As usual, it is up to us to make the decisions. The best advice to avoid being hustled is really very simple. We must do only what we believe is best for our patients. We must not let insurance policies or reimbursement codes or financial managers tell us how to practice medicine. That is our responsibility and ours alone. No one is willing to share that.

Not even the hucksters or the hustlers.

—MRJ

PRESIDENT'S PAGE



One hundred years ago this month, central Oklahoma was opened to settlers, and in one dusty, turbulent day, thousands of claims were staked and a wilderness was transformed overnight into an agricultural settlement. Tent cities sprang up like mushroom gardens, and Oklahoma's prairies and woodlands were suddenly filled by a horde of human beings scrambling for food and shelter.

Their encampments were hundreds of miles from the nearest city, in a time when forty miles was a long day's journey. Railroad travel was rare and expensive and only slightly faster. Staple foods and clothing were costly and seldom purchasable. The work of the world was done with horses and hand-powered tools.

Medical science as we now think of it was just being born when Oklahoma opened, and the validity of the discoveries of Pasteur and Koch was still in question. The notion that invisible microbes might cause disease was thought ridiculous by most people; that insects or body wastes could transmit disease was considered ludicrous or unbelievable.

Malaria, dysentery, diphtheria, typhoid, and tuberculosis were common causes of death, and more children died than lived to adulthood in that era. Surgery consisted mainly of lancing abcesses and amputating shattered extremities, and any abdominal or chest wound was a sentence of death. Only a handful of effective medicines was known, and some of these had to be made by the frontier physician himself. Mortality rates were high, and very few pioneers lived to an age to be susceptible to coronaries, stroke, or cancer.

But across the ages there is a common theme to the work of the physician. Although cure rates in those times were depressingly low, the physician visited and examined the sick and injured. He shared the medical knowledge that he had, and he did what he could to comfort and give symptomatic relief. Medical lore of the era was primitive and sometimes incorrect, but the physician's human warmth and support to the sick earned him the respect of the society in which he worked. He who touched the dying and brought the newest medical knowledge to his town was awarded an invisible crown of respect, and a living.

The outlines of that alliance still exist today, in a subtly altered form. The technical work of the current physician is unrecognizably different from that of the frontier physician. The present availability of vaccines, antibiotics, trained nurses, hospitals, and specialty consultants provides a medical organization that the frontier physician could not imagine in his wildest dreams. Now, the life span of today's patients attests to the great strides of the medical profession, but we also can see that the essence of the physician-patient relationship remains unchanged. While physician effectiveness has multiplied a thousand-fold, human nature has remained the same. The person in fear of death or disability, or suffering from pain or anxiety, has a similar experience regardless of the century in which he happens to live.

So we can affirm that the physician today still has the same duties and obligations to today's patients that his frontier predecessors expressed to their pioneer patients at the time of Oklahoma's opening. We are obliged to continue their tradition of altruistic ideals, and to offer the most appropriate available treatment for the patient's needs from our now-luxurious array of therapeutic options. We must continue to comfort and instruct and support our patients in their time of suffering and vulnerability. We must care for them correctly.

However, we can also see that the medical economic strain produced by today's complex and sophisticated medical service has given us a new duty to patients that did not exist in frontier times. I believe that we physicians must collectively conduct ourselves in such a way that government programs and insurance company policies do not adversely affect the patient's health and personal freedoms. Modern medicine, to realize its ultimate potential, requires scientific autonomy for the physicians, and patients who are free citizens. Neither autonomy nor freedom remain in many current government programs.

An unsettled frontier still exists in medicine's relations with the government and the insurance carriers. Physicians must be the guardians of citizen freedom and scientific autonomy on that frontier until our government comes to its senses.

Ray V. McIntyre, M.D.

Hearing Preservation After Resection of Acoustic Neuroma: A Review

Craig Hinson Rabb, MS IV

The recent literature addressing the problem of hearing loss after acoustic neuroma surgery is reviewed, and efforts to prevent such loss are discussed. Patient selection for hearing preservation, tumor size, surgical approaches employed, the use of intraoperative evoked potential monitoring, and histologic considerations are discussed.

From this discussion, the author concludes that careful selection of patients for appropriate surgical approaches with direct eighth nerve monitoring provides the optimal chance for hearing preservation in patients with acoustic neuromas.

The vast majority of cerebellopontine angle tumors are acoustic neuromas. The remainder include meningiomas, cholesteatomas, and facial nerve schwannomas. Acoustic neuromas arise from schwann cells, and these neoplasms are typically located at the vestibular division of the eighth cranial nerve where its stroma changes from oligodendrocytes to schwann cells. This usually occurs at or near the porus acusticus.

These tumors produce symptoms by expanding within the internal auditory meatus, compressing the adjacent neural and vascular structures. Acoustic neuromas can extrude through the porus acusticus and into the cerebellopontine angle, thereby allowing compression of the brain stem and subsequent obstructive hydrocephalus. Patients usually present with progressive unilateral sensorineural hearing loss and frequently experience tinnitus in the involved ear. They may also exhibit unsteadiness of gait, although frank vertigo is not typical. Due to their location, these tumors can abut and cause neuropathies of cranial nerves V and VII.

Acoustic neuromas often are suspected subsequent to an abnormal audiogram. Affected patients classically show decreased pure tone thresholds and poor speech discrimination. Auditory brain stem responses frequently are utilized to confirm retrocochlear location of the lesions. Once a retrocochlear lesion is identified, air contrast CT cisternography is utilized if a contrast enhanced CT scan fails to show a tumor. The former can demonstrate intracanalicular tumors. Eventually, magnetic resonance imaging (MRI) will probably play a major role in the early diagnosis of small tumors, but few data are currently available.

Treatment goals, in order of importance, are as follows: (1) tumor excision with avoidance of lethal complications; (2) preservation of the facial nerve; and (3) preservation of hearing.[1] Since not all tumors ultimately result in death secondary to posterior fossa extension, hearing preservation is a realistic goal; total excision at the expense of hearing may not be the ideal objective in all patients.

Patient Selection for Hearing Preservation Surgery

Audiometric Criteria. Criteria for serviceable hearing remain a controversial topic. The surgeon not only must decide what level of hearing warrants

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an attempt at preservation but also must determine the parameters of postoperative hearing that constitute a successful result. Smith[2] utilized criteria of 80% speech discrimination. He was able to preserve this level in 50% of patients via the posterior fossa approach. The tumors were all less than 1.5 cm in diameter (as measured by the amount of tumor protruding from the porus acusticus). Clemis[1] defined serviceable hearing as a 30 dB speech reception threshold and 80% speech discrimination, criteria met in only 0.8% of his patients. Wade and House[3] described serviceable hearing as 50 dB pure tone threshold and 50% speech discrimination. Nevertheless, they attempt hearing preservation if patients have a 30 dB pure tone threshold and 70% speech discrimination. Cohen and Ransohoff[4] also operated on patients with 30 dB pure tone averages and 80% speech discrimination, but this constituted only 10% of their patients. Perhaps the most comprehensive system for the assessment of hearing quality was that utilized by Silverstein et al[5] (Table). They used pure tone averages of 0.5, 1.0, and 2.0 kHz.

Tumor Size and Bilaterality. Patients with bilateral involvement and patients without hearing in the contralateral ear should be considered for hearing conservation. One may elect to follow the former group, especially those patients with neurofibromatosis, as these tumors are difficult to excise without residual hearing deficits.[6] Nedzelski and Tator,[7] Clemis,[1] and Palva et al[8] report that hearing preservation is unlikely in patients with tumors greater than 2 cm in size, although this has been accomplished. Using criteria of 50 dB pure tone averages and 50% speech discrimination, Silverstein et al[9] attempted to correlate hearing preservation with tumor size. For tumors less than 1.0 cm in diameter, 3 of 4 patients retained hearing postoperatively, as compared to 2 of 5 with tumors 1.5 cm in diameter and 1 of 4 with tumors greater than 2.0 cm in diameter. All patients were operated on via the posterior fossa. In a later series,[5] Silverstein et al preserved hearing in 6 of 8 patients with tumors less than 1.5 cm in diameter. The posterior fossa approach and direct intraoperative eighth nerve monitoring were employed in the treatment of the latter group of patients.

Table. System for Assessment of Hearing Quality[5]

Hearing	PTA dB	Speech Discrimination
Class I Good to excellent	0-30	70-100%
Class II Serviceable	35-50	50-65%
Class III Nonserviceable	55-75	25-45%
Class IV Poor	80-100	0-20%
Class V No Measurable hearing	—	0%

In contrast to the above studies, Neely[10] demonstrated the formation of histologic "onion bulbs" in the cochlear nerve lateral to the tumor. Since these areas of demyelinization and myelinization are known to decrease conduction in affected nerve fibers, the presence of onion bulbs may confound attempts to correlate tumor size and hearing levels. Neely noted no correlation between tumor size and extent of histologic invasion of the cochlear nerve.

Surgical Approaches — Considerations with Regard to Hearing Preservation

Translabyrinthine Approach. When serviceable hearing is absent, some authors consider the translabyrinthine approach to be the method of choice because of its low rate of resultant facial nerve dysfunction and the low incidence of meningitis. Wiet et al[11] reported only a 2% incidence of meningitis after this procedure, while preserving more than 90% of facial nerves. Pait et al[12] reported that it was more difficult to remove tumors in toto by this approach, and it required the patient to endure a longer procedure. For tumors larger than 3.0 cm in diameter, Glasscock[13] has advocated the combined translabyrinthine-suboccipital approach, as this provides the best exposure for controlling bleeding near the brain stem. Since this procedure necessitates avulsion of the eighth nerve, hearing is sacrificed.

Posterior Fossa — The Suboccipital and Retrosigmoid (Modified Suboccipital) Approaches. The posterior fossa approach traditionally has been associated with increased morbidity and mortality. Rhoton,[14] however, reported no requirements for cerebellar resection, and no deaths, and was able to preserve 90% of facial nerves. Some authors claim that this approach is the only one that permits both complete resection of the tumor and hearing preservation.[12] Using this approach, Smith[2,15] preserved hearing in 5 of 10 patients with tumors less than 1.5 cm in diameter and speech discrimination of greater than 80%. In Wiet's series of 10 patients, 1 died of pontine infarction, 4 required facial nerve grafts, and none had hearing preserved.[11] In lieu of the suboccipital approach, 2 patients were

operated on via the retrosigmoid approach. Both of these patients retained hearing.

Cohen and Ransohoff[4] preserved the cochlear nerve in 8 of 20 patients, only one of whom had a tumor larger than 2.0 cm in diameter. Nedzelski and Tator[7] resected tumors in 25 patients with speech reception thresholds of 50 dB, speech discrimination scores greater than 60%, and tumor size less than 2.0 cm in diameter. Cochlear nerves were preserved in 20 patients, and hearing was preserved in 6 patients. Tator and Nedzelski[16] preserved the nerve in 16 of 19 patients, while hearing was retained in 6 of those subjects. Palva et al[8] reported a success rate of 11 of 30 patients.

Major complications of the posterior fossa procedure include damage to the posterior fossa vasculature and the seventh and eighth cranial nerves, as well as injury to the endolymphatic sac and duct.[1]

Intraoperative auditory evoked potential monitoring has not consistently improved hearing preservation.

The latter invariably results in progressive sensorineural hearing loss. This approach does not provide adequate exposure of the lateral end of the internal auditory canal, thus necessitating blind dissection or conversion to a combined suboccipital-translabyrinthine procedure to permit complete tumor resection.

Middle Fossa Approach. The middle fossa approach has been advocated for tumors less than 1.5 cm in diameter, in addition to intracanalicular tumors. Wiet et al[11] employed this procedure in 6 patients, preserving hearing in 3. They also reported that more than 90% of facial nerves were preserved. In Wade and House's study,[3] 20 patients underwent surgery via the middle fossa. Hearing was preserved in 7, and only 1 had major facial paresis.

The main limitation of this procedure is that exposure is limited when the tumor protrudes into the cerebellopontine angle, especially if the tumor hemorrhages into the cistern.[14] Another possible complication involves identification and preservation of the facial nerve. The surgeon identifies the nerve by tracing the greater superficial petrosal nerve to its junction with the geniculate ganglion and must preserve the artery that courses with that nerve. In spite of this difficulty, Glasscock and Dickins[17] reported facial nerve preservation in over 95% of their cases. Glasscock[18] also preserved hearing in 31% of 32 patients who met preoperative criteria of 50 dB pure tone averages and speech discrimination greater than 50%.

Intraoperative Auditory Evoked Potential Monitoring

In spite of anatomic preservation of the cochlear nerve, hearing is often lost. Intraoperative auditory evoked potential monitoring has been employed in an attempt to refine operative techniques and to elucidate the mechanisms by which hearing loss occurs. Using the posterior fossa approach, Levine et al[19] demonstrated that hearing loss may be the result of interruption of the acoustic artery. Although 2 of 6 patients displayed rapid loss of brain stem auditory evoked potentials (the acoustic nerve) and of the cochlear microphonic potential, one patient had gradual loss of evoked potentials, and another showed no change in the cochlear microphonic. The latter findings were inconsistent with this concept. Levine further demonstrated that even though feedback from changes in waveforms of the eighth nerve can be as rapid as five seconds, this still does not allow the surgeon to modify his technique in time to preserve hearing.

Ojemann et al[20] resected tumors in 22 patients via the suboccipital approach. They correlated changes in the cochlear microphonic and wave one with hearing changes. Hearing was preserved in 11 patients. Of the patients in whom hearing was not preserved, the hearing loss was correlated with loss of the wave associated with the eighth nerve. These investigators speculated that these changes were the result of spasm of the acoustic artery. They also expressed the opinion that feedback changes in waveforms were an unreliable method of enhancing hearing preservation.

Hardy et al[21] described a patient in whom a small piece of tumor was left adherent to the cochlear nerve after a change in the first wave was seen intraoperatively. Postoperatively, this patient had speech reception thresholds of 45 dB and speech discrimination of 80%.

Silverstein et al[5] compared direct eighth nerve monitoring to brain stem auditory evoked potential monitoring and felt that the former had the advantage of nearly instantaneous feedback to the surgeon.

Electrocochleography has given similar results, but requires tympanic electrodes. Silverstein et al believed that brain stem auditory evoked potential monitoring was best suited to estimation of hearing after surgery. Using direct eighth nerve monitoring, they preserved hearing in 4 of 8 patients via the posterior fossa approach.

Histologic Considerations

Cochlear Nerve Invasion. Neely[10] performed histologic sections of tumors and adjacent nerves. His study indicated that even in adjacent cochlear nerves that grossly appeared to bypass the tumor mass, complete resection of tumor away from the cochlear nerve was impossible. Nevertheless, hearing loss was demonstrated to be negligible even when the majority of the eighth nerve fibers were destroyed.

In a separate article,[22] Neely discussed one patient with preoperative criteria of speech discrimination of 80%, pure tone averages of 30 dB, and tumor diameter less than 1.5 cm. This patient had microscopic infiltration of the cochlear nerve in the absence of gross tumor invasion of that nerve. Neely suggested that approximately 7000 fibers of the cochlear nerve must be spared in order to retain hearing. Since a neuroma causes dispersion of the fibers within a nerve, resection of the tumor and preservation of an adequate number of neurons in one trunk is considered unlikely.

Incomplete Resection. An additional question must be addressed. If one resects a tumor incompletely, is it likely to recur rapidly? Few data are available at the present time, although Silverstein[9] reported that unresected tumors in 15 elderly patients demonstrated little or no growth for as long as eight years following deliberate subtotal resection.

Conclusions

1. Optimal criteria for hearing preservation are pure tone averages of at least 30 dB and speech discrimination of greater than 70%.

2. When hearing conservation represents a reasonable surgical objective:

(a) Tumors that are intracanalicular are best approached via the middle fossa.

(b) Tumors that extend through the porus acusticus are best approached via the posterior fossa. The best results occur with tumors less than 2.0 cm in diameter, but even in these patients hearing is not always preserved.

3. Intraoperative auditory evoked potential monitoring has not consistently improved hearing preservation; however, direct eighth nerve monitoring may be helpful.

4. In spite of gross resection of tumor with hearing preservation, microscopic tumor residual usually remains. When hearing preservation is attempted in appropriately selected patients, they must be followed closely for tumor recurrence.

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Growth Hormone: Past, Present, and Future

Frederick V. Schaefer, PhD; Jennifer Swartz-Boyd, BS; and Don P. Wilson, MD

Isolated growth hormone deficiency (IGHD) is a disease with complex origins. Today it is being diagnosed and treated with the latest recombinant DNA technologies.

For over 20 years, cadaver-derived human growth hormone was used successfully to enhance linear growth in children with growth hormone deficiency. In 1985, viral-like contaminants forced government and commercial sources of growth hormone to cease distribution and withdraw the product from the market. Fortunately, recombinant deoxyribonucleic acid (DNA) technology filled this void, providing tools to synthesize growth hormone and to perform molecular diagnosis by detecting changes in the growth hormone gene.

Glossary

GHRF — Growth hormone releasing factor.
hGH — Human growth hormone.
hGH-N — Used when referring to the hGH gene specifically.
IGHD — Isolated growth hormone deficiency.
kb — Kilobases or 1000 nucleotide bases. These bases are the four building blocks of deoxyribonucleic acid (DNA): A, adenine; G, guanine; C, cytosine; T, thymidine. The human genome is composed of over 2×10^8 nucleotides.
Probe — A small DNA fragment that can be used to hybridize or bind and, therefore, locate complementary DNA sequences.
Recombinant DNA — A constructed molecule composed of DNA derived from two or more sources.
Restriction enzyme *BAMH* I — A protein that will cleave DNA at the specific nucleotide sequence GGATCC.

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The Disease

Growth hormone is a 191 amino acid protein produced by the anterior pituitary (Fig 1). Following a variety of stimuli whose actions remain incompletely understood, the hypothalamus controls the release of human growth hormone (hGH) from the anterior pituitary via stimulation (growth hormone releasing factor, or GHRF) or inhibition (somatostatin). Once released, hGH evokes production and release of other growth-promoting factors, notably somatomedins, derived principally from the liver.[1]

Subnormal stature is a common occurrence in the pediatric population. Unfortunately, in many potentially correctable cases, diagnostic studies may not be pursued. Often the child is simply reassured that "catch-up" growth will occur in the future. Since effective treatments exist for many conditions that result in poor linear growth, diagnostic efforts should be vigorously pursued. Isolated growth hormone deficiency (IGHD), for example, is a relatively common genetic disease (greater than 1 in 5000 births), with a carrier prevalence of 1 in 50 in the general population.[2] Early diagnosis and appropriate treatment can lead to normal adult height.

Because hGH concentrations in blood normally tend to be low, measuring unprovoked levels of growth hormone in short children is generally mean-

ingless and often leads to misdiagnosis. Screening methods for growth hormone deficiency, such as nocturnal blood sampling or postexercise testing, are awkward to perform and/or are often inadequately supervised.

By current standards, IGHD can be defined if the child fails to secrete adequate quantities of hGH in response to at least two pharmacologic stimuli. Agents commonly used include insulin, arginine, L-dopa, and glucagon. Especially in the pubertal age group, sex steroids (estrogens in females and androgens in males) or propranolol are often used to enhance hGH release during provocative stimulation. Prior to testing, it is imperative that the patient be euthyroid and free of other conditions (such as malnutrition and chronic illness) known to result in transiently depressed growth hormone secretion.

Attempts have been made to further define IGHD using somatomedin-C levels as a measure of hGH adequacy. These results are questionable, however, since values of somatomedin-C in hGH-deficient children and in normal controls overlap.[3] Furthermore, sustained linear growth and measurable levels of somatomedin-C have been demonstrated in growth hormone–deficient children.[4] Therefore, while the level of somatomedin-C is an important correlate in the diagnosis of growth hormone deficiency, it cannot be used as the only criterion for the presence of IGHD.

The Past

Previously, growth hormone was derived from human cadavers and was extracted, purified, and distributed almost exclusively by the National Pituitary Agency (NPA), a branch of the National Institutes of Health. In 1976, commercial sources became available for the first time. Combined, these government and commercial sources have provided human growth hormone to an estimated 12,500 individuals.

In 1985, investigators learned that three US men and later a woman from Great Britain had died of the rare, universally fatal Creutzfeldt-Jakob disease (CJD),[5] a nervous system disease transmitted by viral-like particles. Symptoms of CJD include erratic and aggressive behavior, progressive memory loss, confusion, difficulty walking, loss of muscle coordination, failing vision, and muscle jerking or rigidity. The disease is severe and relentless, resulting in death within one year of onset. No treatment or cure is available.

The deaths were unusual not only because of the young age (21-34 yrs old) of the victims (CJD usually affects an older population), but also because all four had previously received hGH. Scientists concluded that the deaths were due to exposure to the CJD agent, most likely resulting from growth hormone injections.[5] Consequently, hGH derived from human cadavers was withdrawn from the US market.

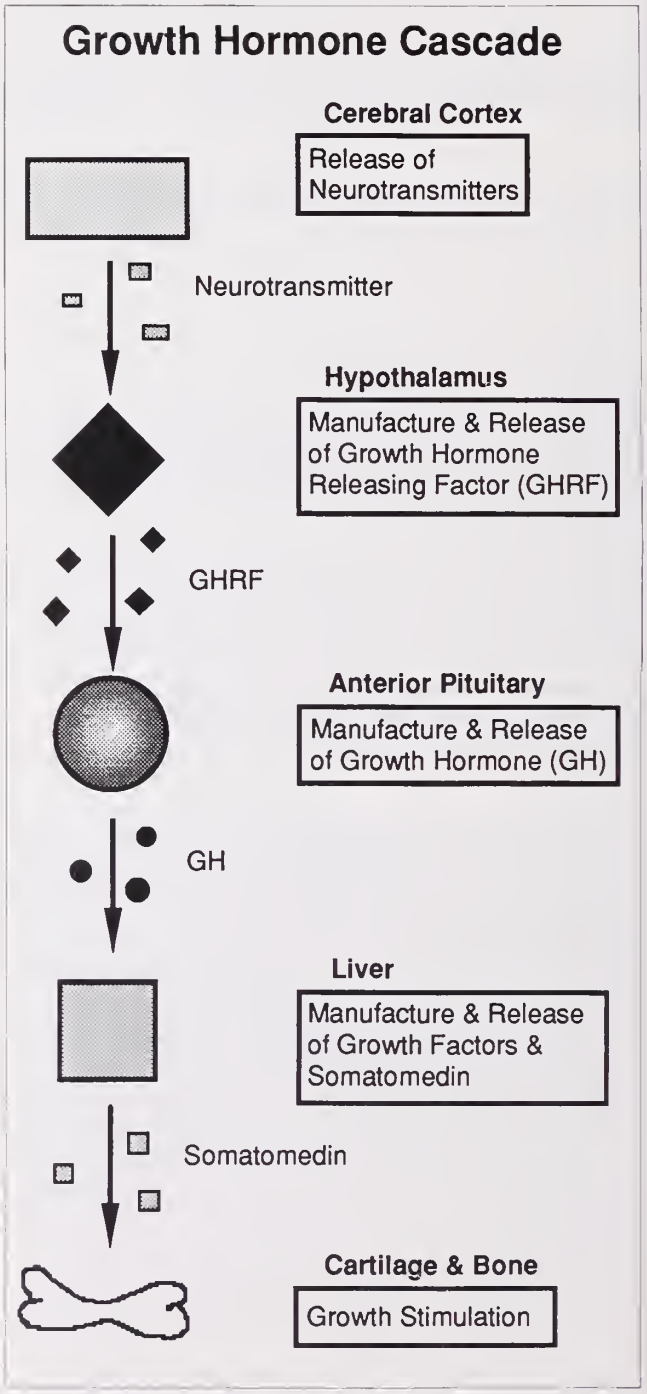

Figure 1. A simplified schematic of the growth hormone cascade.

The Present

In 1985, the commercial availability of synthetic growth hormone via recombinant DNA technology eliminated the risk of CJD. Potentially unlimited quantities of growth hormone became available for therapy, and new avenues of research emerged. In addition to improving linear growth in hGH-deficient children, recent work demonstrates promising growth improvement in abnormalities for which the etiology of the growth failure remains unclear (such as Turner syndrome, children with intrauterine growth retardation, and those affected by constitutional delay). It remains to be seen whether biosynthetic growth hormone therapy will result in significant improvements in the adult height of treated children.

It is becoming increasingly clear that a number of defects involving the secretion and production of hGH exist, ranging from absolute deficiency to inadequate secretion. Many centers are now extending diagnostic evaluation of short children to include quantitation of physiologic hGH secretion by measuring pulsatile hGH secretion during a continuous 12-to-24-hour period. Blood samples taken at 20-minute intervals during the 12-to-24-hour test period are analyzed for hGH, after which various indices, ie, total integrated concentration, mean concentration, pulse frequency, and amplitude, can be calculated.

The Future

The production of biosynthetic growth hormone by recombinant DNA engineering has provided physicians with a means of effective treatment in most cases. The success of such treatment appears to rely upon correct diagnosis.[6] Since IGHD can be the result of a number of genetic defects, the recent availability of recombinant DNA technology offers the physician another aid in diagnosis as well as a key to understanding the gene defects that cause the disease. To understand the capabilities and limitations in growth hormone diagnosis, a review of clinical tests using recombinant DNA probes and a discussion of the growth hormone gene locus are required.

Diagnosis by Recombinant DNA Probes. Genetic diseases that can be diagnosed by use of recombinant DNA probes fall into two classes.[7] In the first class, both the gene defect and the sequence of bases making up the affected gene are known (eg, sickle cell anemia). Therefore, probes directed to the gene are employed for diagnosis. In the second case, little is known about the specific nature of the gene or the defect, but diagnosis can be made using "genetic markers," a detectable variation in the DNA sequence that is linked to the disease gene and transmitted in an inherited fashion (eg, cystic fibrosis). This change can be traced through the family from an affected member to the person in question. Both types of studies employ recombinant DNA probes containing small segments of DNA that bind only to homologous sections of DNA found within or closely associated with the gene.[7]

In contrast to what is known about the genes responsible for most genetic diseases, a great deal is known about the structure of the growth hormone gene. Most of the gene has been sequenced, including the unexpressed regulatory sequences.[8] However, the exact molecular defect(s) that causes growth failure is known in only a very small number of the cases thus far examined.[9]

Growth Hormone Gene. The growth hormone gene is part of a gene family located on chromosome 17 (Fig 2)[10]: it contains the genes encoding growth hormone (hGH-N), one growth hormone variant (hGH-V), two chorionic somatomammotropin genes (hCS-A and B), and one silent duplication (hCS-L). Despite the distinct regulation of each gene in the complex, the genes are uniquely similar in sequence. In fact, they are >90% homologous.

The high degree of homology among these loci imposes a unique challenge for molecular diagnosis. Specifically, a probe to the hGH-N gene will also react with the other four loci. Therefore, although the digestion of human DNA with the restriction enzyme *Bam*H I conveniently separates each of the five genes in the complex into five different-sized fragments, each fragment binds with the probe (Fig 3). Only studying family inheritance patterns permitted investigators to identify the fourth largest fragment (3.8 kb) as containing the hGH-N gene.

Clinical Forms of IGHD and Molecular Diagnosis. Several familial disorders are associated with an isolated deficiency of hGH. In only one of these familial disorders, IGHD-1A (isolated growth hormone deficiency type 1A) is the molecular mechanism clearly understood. IGHD-1A has an autosomal recessive mode of inheritance, and affected individuals have no detectable hGH.[9] When treated with hGH, these patients often develop high titers of antibodies that inhibit the therapeutic growth effect.

IGHD-1A results from a deletion of the hGH-N gene and, therefore, a total absence of growth hor-

mone.[9] In the laboratory this defect can be detected by the disappearance of the hGH-N band (3.8 kb) following digestion with *Bam*H I. The band's absence causes the body to identify administered hGH as a foreign protein, resulting in production of antibodies that limit the effectiveness of therapy. Since hGH-V is still present in DNA, these results indicate that the variant gene cannot substitute for hGH-N.

Although the deletion of the hGH-N gene has been clearly shown, the gene's incidence is unknown. Our laboratory is currently attempting to determine the incidence of IGHD-1A by surveying an unselected IGHD population (Table 1). To date we have examined 17 children in 16 families: none has had a gene deletion. Statistically, our results indicate that the incidence of this particular defect is <10% ($p<0.05$). All children studied have responded well to growth hormone therapy, and none has produced antibodies.

The other forms of IGHD also have distinct clinical characteristics (Table 2). For example, IGHD-1 also has an autosomal recessive mode of inheritance. In contrast to IGHD-1A, low but detectable levels of endogenous hGH may be found by using radioimmunoassay. Such patients generally do not develop antibodies in response to growth hormone therapy.

One likely mechanism for the reduced hGH levels

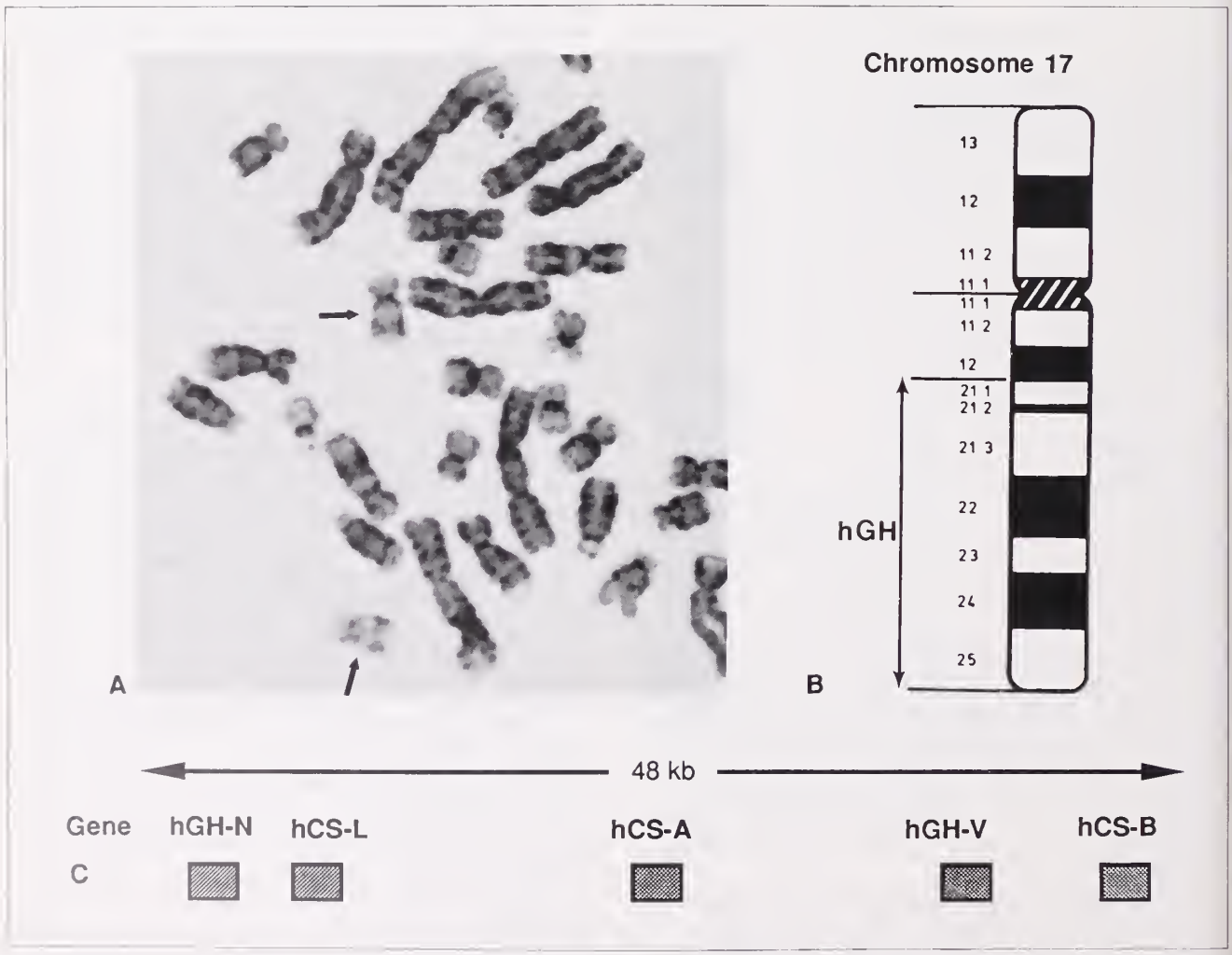

Figure 2. A structural map of the human growth hormone gene cluster. (A) Partial chromosomal spread identifying the two chromosome 17s on which the hGH gene cluster is localized. (B) Map of chromosome 17 illustrating the sublocalization of hGH gene cluster 17q21-25. (C) Detailed gene map of the five highly homologous but functionally distinct genes which occupy 48 kb of DNA. The genes in the locus are human growth hormone, hGH-N; an inactive variant of growth hormone, hGH-V; and two forms of chorionic somatomammotropin and its pseudogene, hCS-A, hCS-B, and hCS-L.

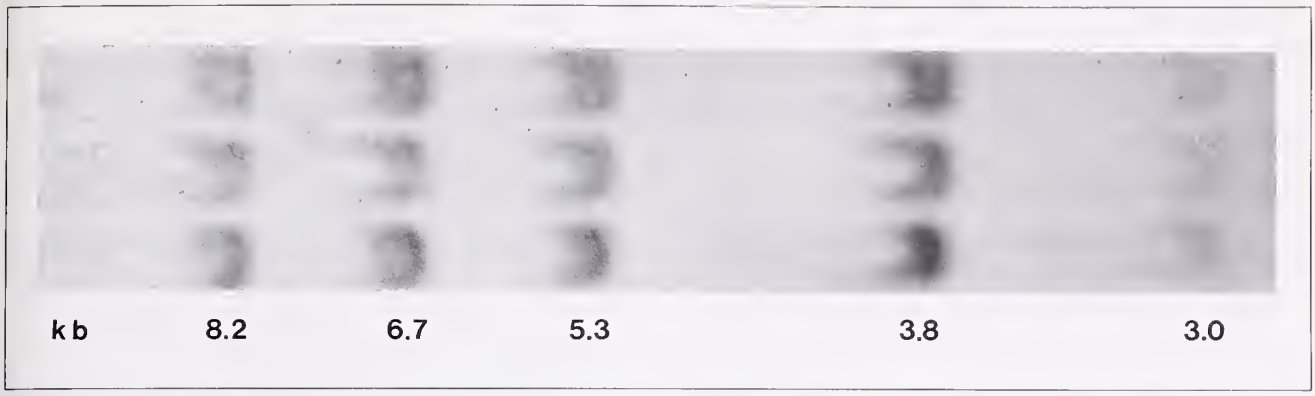

Figure 3. A *Bam*H I digest of human DNA in which the fragments have been separated by size and reacted with a radioactively labeled probe to hGH. The five bands represent the five genes of the hGH locus. A gross deletion of the hGH-N gene (IGHD-1A) results in the disappearance of the 3.8 kb band.

seen in IGHD-1 is a mutation(s) at another autosomal gene locus. Because the synthesis of hGH is the middle step of a complex biological cascade, growth hormone production must be influenced by previous steps. Indeed, studies of some families have clearly shown that patterns of inheritance of the hGH-N gene have not coincided with the inheritance patterns in IGHD-1 and, therefore, reflect defects in other genes.[1,11] The genes for hormone receptors, neuropeptides, and organ differentiation are all potential sites. In certain families, for example, GHRF produced by the hypothalamus is clearly responsible for IGHD. Therapies using GHRF have stimulated hGH production in a few reported children, indicating the defect in the growth hormone cascade may lie within the GHRF gene.[12] Currently in our laboratory we are attempting to identify aberrations in the sequence of GHRF that might affect GHRF regulation and, in turn, hGH production.

IGHD-II is inherited as an autosomal dominant disorder. The final form (IGHD-III) is X-linked recessive and associated with hypogammaglobulinemia. In contrast to IGHD-1A, studies of DNA from individuals with these forms of IGHD indicate that hGH-N gene sequences are not deleted. The

Table 1. Characteristics of IGHD Patients

Family	No. Affected in Family	Growth Rate* Before	Growth Rate* After	hGH-N Gene Deletion	GH Antibody
1	1	5.5	11.4	No	No
2	1	5.1	10.9	No	No
3	1	1.4	8.4	No	No
4	1	**	8.6	No	No
5	1	1.4	9.0	No	No
6	1	3.0	7.6	No	No
7	1	3.0	7.0	No	No
8	1	1.3	9.5	No	No
9	1	2.7	6.2	No	No
10	1	2.3	8.8	No	No
11	1	4.5	8.2	No	No
12	1	4.3	9.7	No	No
13	1	3.6	8.4	No	No
14	1	4.8	7.2	No	No
15	1	6.4	9.9	No	No
16	2	***	***	No	***

* Growth rate in cm/yr before and after hGH therapy
** Treatment started at birth
*** Information not available

Table 2. Genetic Growth Disorders

Type	Mode of Inheritance	Defect	Endogenous GH	Ab Response to Treatment
IGHD 1A	Autosomal recessive	Deletion of all/part of hGH-N gene locus	Absent	High
IGHD 1	Autosomal recessive	Defect(s) in GH gene	Decreased	None
		or		
		Defects in distant gene loci	Decreased	None
IGHD II	Autosomal dominant	Unknown	Decreased	None
IGHD III	X-linked	Defect in distant gene loci	Decreased	None

mechanisms involved in IGHD-II and IGHD-III are totally unknown.

Summary

Recent progress in the diagnosis and therapy of IGHD illustrates the ever-increasing influence of recombinant DNA research. Recombinant DNA technology has already resulted in the synthesis of therapeutic growth hormone that is both relatively easy to produce and safe. Recombinant DNA probes have also been developed that can clearly diagnose one form of growth hormone deficiency (IGHD-1A) and are approaching identification of other forms. Finally, since they function by direct interaction with the genes, probes will also detect the precise molecular defect(s) causing IGHD. This knowledge potentially could lead to a means of correcting the mutations themselves.

Acknowledgments

We thank Genentech Inc. for generously donating the cDNA probe used to identify the genes of the hGH locus.

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Coming next month

Among the manuscripts being considered for publication in May are a report on an outbreak of gastrointestinal illness in a state prison; an overview of the epidemiology, immunology, and control of meningococcal disease; and a study of the incidence of *Mycoplasma pneumoniae* in a Veterans Administration Medical Center.

Beulah and the Body Shoppe

Stanley N. Schwartz, MD

"Well, I'm really not sure. . . . " The old woman looked unsettled as she spoke. She stirred her coffee slowly, her arthritic hands aching as she held the spoon. She continued: "Francie, I've been with Doc Inalby for almost 25 years. He's seen me through a lot of sickness. It'd be hard to change."

"I know," Francie said, trying to be as persuasive as she could. "Beulah, times are changing and you've got to change, too. I used to go to a regular doctor in a regular old-fashioned office. He would see you and then write a prescription. It wasn't anything special at all. And don't forget about that lady at the window who always asked you to pay, just like that! They never once even asked me about credit cards or easy payment plans. Anyway, just look at your hands. You need help."

"But why couldn't I just go to that other doctor you went to?"

Francie shifted positions in her chair. "I hope you don't mean Dr Hardesty's. That was a nice place until his business got slow and he took on that franchise for those people who either eat too much or don't eat enough. 'Doctor Hardesty's Filling and Losing Station' is what they wound up calling it. I finally had to stop going there. That's when I signed up with the General Medicine Corporation Body Shoppe. That was the best decision I've made in years."

The old woman shook her head again. She was still undecided. Francie continued: "Did you know they have 38 exam bays at GMC? Their ads in the newspaper say that you either get seen in 15 minutes or you get a 50% discount. Now, I think that's a pretty good deal."

Beulah nodded; she could remember waiting an hour or more at Doctor Inalby's office. No question about it — she was starting to be swayed. She said, "I did see that commercial on TV about the wing out back of GMC Clinic where they do that operation that draws the fat out of where you don't want it. They called it the 'Contour and Bumper Clinic.' "

Francie was glad to see Beulah become enthusiastic about the Body Shoppe. She said to Beulah, "They offer several different ways to pay. Melvin and I took out a Maintenance Contract. We just pay one fee each year."

"You mean all your service is free after that?" Beulah asked.

"Well, not exactly. You have to pay a few dollars each visit . . . it's something they call a 'Braking Fee.' But it's still a good deal. There are some other things you have to pay for if you get really sick and have to go to the hospital, but if you stay healthy, it's a real bargain. And I plan to stay healthy. Three weeks ago, when I had my kidney infection, it only cost me a few dollars to get my specimen checked and to get a prescription. I was better in just a couple of days."

"When I had a kidney infection, Doc Inalby used to give me medicine and then he'd check me again after I finished it," Beulah said, still proud of her soon-to-be-former doctor.

"They told me they don't need to do that at the

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Body Shoppe," Francie said. "They said that checking up on people who got well would just raise everyone's fees."

"But are they any good at fixing arthritis?" Beulah asked.

"Good? You bet they're good. They have a special area for arthritis they call the Chassis Lift. They showed Melvin and me around right before we signed up. They told me they have three doctors who do nothing but treat arthritis. They have X-rays and sound wave tests, and they do that arthur-scope thing where they look inside your knee. I'm sure they have the best equipment in town."

"Old Doc Inalby used to give me a cortisone shot in my knee when it got sore and swollen."

"They can do that also," Francie said, "but only after they do all those tests first. Only thing is, they did tell us that those of us on maintenance plans could only use the Chassis Lift after our Personal Body Mechanic referred us."

"I heard them talk about 'Personal Body Mechanics' on the TV ad," Beulah said. "I have to admit that does sound more . . . well, personal, than Doctor this or Doctor that. I guess you really liked the one you saw the last time."

"Oh, I did. They all look so cute in those uniforms with the stethoscope printed on the front. This one I saw was a Blue Senior Inspector, which means he's been around for a long time."

"Well, if I decide to go, I hope I get him. Do you remember his name?"

Francie stopped and thought for a moment. "Well . . . no, I can't remember it." She shrugged her shoulders and said, "What does his name matter anyway?"

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Thursday, May 4

11:30 AM . . . . . OSMA and OSMAA Registration & Hospitality
12 Noon . . . . . OSMA Executive Committee Meeting and Luncheon
12 Noon . . . . . OSMAA Pre-Convention Board Meeting and Luncheon
1:30 PM-5 PM . . . . . OSMA Board of Trustees
4 PM-5:30 PM . . . . . OU College of Medicine Alumni Association Board of Directors
6:30 PM . . . . . OU College of Medicine Alumni Association Reception
7:15 PM . . . . . OU College of Medicine Dinner/Dance

Friday, May 5

7:30 AM . . . . . OSMA/OSMAA Registration & Hospitality
7:30 AM . . . . . OSMAA Past Presidents Breakfast
7:30 AM . . . . . OSMAA County Presidents/President-Elect Breakfast
8 AM . . . . . Hospitality (coffee and rolls), OSMAA Members-at-large, RP/MSS, and Honored Guests
9 AM . . . . . OSMA House of Delegates Opening Session
9:30 AM . . . . . OSMAA House of Delegates
10:30 AM . . . . . OSMA Reference Committees
12:30 PM . . . . . OSMAA Luncheon/Fashion Show
1:30 PM-5 PM . . . . . OU College of Medicine Scientific Program
6 PM . . . . . OSMA President's Reception
7 PM . . . . . OSMA President's Banquet

Saturday, May 6

7:30 AM . . . . . OSMA/OSMAA Registration & Hospitality
7:30 AM . . . . . OSMA Past Presidents Breakfast
8 AM . . . . . Plastic Surgery Society of Oklahoma
8 AM . . . . . Surgical Association of Oklahoma
8 AM . . . . . Oklahoma Chapter American College of Emergency Physicians/Oklahoma Chapter
8 AM . . . . . American Academy of Pediatrics
9 AM . . . . . OSMA House of Delegates Closing Session
9 AM . . . . . OSMAA Post-Convention Board Meeting (Continental Breakfast)
12 Noon or after House of Delegates . . . PLICO Forum
1 PM-4 PM . . . . . PLICO Loss Prevention Seminar

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News from
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Vaccine-Preventable Illness

Periodic waves of vaccine-preventable illness in children create serious medical and socioeconomic problems for Oklahoma families. Among the reasons for incompletely immunized children is a natural hesitancy to initiate the periodicity schedule of the Advisory Committee on Immunization Practices and the American Academy of Pediatrics in preterm infants. Recent studies (Phillips, et al) should again reassure us that the preterm infant is immunologically competent and no more susceptible to local reactions than term infants.

Since the attack rate of pertussis is highest in children under 1 year of age, delay is of special concern to this group that has significant problems in handling respiratory disease.

The Oklahoma State Department of Health joins the neonatologists at Children's Hospital of Oklahoma in encouraging initiation of DTP and OPV immunization at the chronological age of 2 months. Even infants in the neonatal intensive care units can be immunized with DTP at the recommended intervals. Neonatal units should also examine their immunization policies for infants, staff, and visitors. Precautions and contraindications are otherwise unchanged from the package insert.

DISEASE	Monthly Reporting Period Ending 1/31/89	TOTAL TO DATE		
		This Year	Last Year	5 Yr. Avg.
ACQUIRED IMMUNE DEFICIENCY SYNDROME	9	9	11	5
CAMPYLOBACTER INFECTIONS	6	6	8	14
CHLAMYDIA INFECTIONS	149	149	142	#
ENCEPHALITIS, INFECTIOUS	2	2	1	1
GIARDIA INFECTIONS	15	15	9	16
GONORRHEA (Use ODH Form 228)	582	582	479	1063
HAEMOPHILUS INFLUENZAE INVASIVE DISEASE	16	16	23	22
HEPATITIS A	43	43	40	37
HEPATITIS B	15	15	10	14
HEPATITIS, NON-A NON-B	1	1	1	5
HEPATITIS UNSPECIFIED	0	0	2	6
HUMAN IMMUNODEFICIENCY VIRUS INFECTIONS	27	27	*	*
MENINGITIS, BACTERIAL (non-meningococcal, non H. Influenzae)	0	0	3	5
MENINGOCOCCAL INFECTIONS	1	1	1	3
MUMPS	40	40	8	—
PERTUSSIS	0	0	0	2
RABIES (ANIMAL)	5	5	3	4
ROCKY MOUNTAIN SPOTTED FEVER	0	0	0	0
SALMONELLA INFECTIONS	24	24	19	23
SHIGELLA INFECTIONS	9	9	25	18
SYPHILIS (Use ODH Form 228)	6	6	13	15
TUBERCULOSIS	1	1	7	13
TULAREMIA	1	1	1	1

#Made Reportable in 1985 —Made Reportable in 1987 *Made Reportable in 1988

Injuries	Total to Date This Year	Fatalities No. (%)
BURN	56	9 (16)
TRAUMATIC SPINAL CORD INJ	6	1 (17)
DROWNING/ NEAR DROWNING	2	2 (100)

Diseases of Low Frequency	Total to Date This Year
AMEBIASIS	0
BRUCELLOSIS	0
LEGIONNAIRES' DISEASE	4
MALARIA	0
MEASLES (RUBEOLA)	0
REYE SYNDROME	0
RUBELLA	0
TETANUS	0
TOXIC SHOCK SYNDROME	0
TYPHOID FEVER	0

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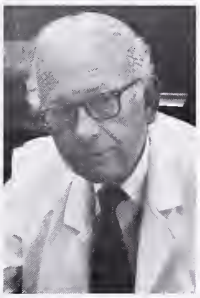
Selected by President Bush

C. Alton Brown, MD, to serve on national diabetes committee

President George Bush has selected C. Alton Brown, MD, Oklahoma City internist and diabetes specialist, for appointment by Secretary Otis Bowen to a national diabetes advisory committee.



Dr Brown

The committee — the Technical Advisory Committee for Diabetes Translation and Community Control Programs — was established to advise the director of the Centers for Disease Control on programs that reduce morbidity and mortality resulting from diabetes. The thirteen-member committee will meet four times a year and will submit its recommendations in the form of an annual report to the director.

Dr Brown has long been active in the Oklahoma State Medical Association and has served as president and chairman of the board of the Physicians Liability Insurance Company (PLICO) since its founding in 1980. He was the moving force behind the creation and funding of a chair in diabetes within the Department of Medicine at the University of Oklahoma Health Sciences Center.

A graduate of the University of Oklahoma Medical School, Dr Brown completed his residency in internal medicine at St. Anthony Hospital, Oklahoma City, and postgraduate studies at Harvard University School of Medicine. In addition to his many medical and community accomplishments, he has served since 1971 as honorary consul from Oklahoma for the government of France, having been appointed during the presidency of Georges Pompidou.

State agencies unite against AIDS, open new OK-CARE office in OKC

The Oklahoma Center for AIDS Resources and Education (OK-CARE) was established to help meet the educational and training needs of health care professionals responding to the multifaceted challenges posed by the epidemic of HIV infection and AIDS. OK-CARE is a resource and information clearinghouse for health care providers. It is funded through the AIDS Regional Education and Training Center, University of Texas, Houston, School of Public Health. It is co-sponsored by the University of Oklahoma Health Sciences Center, the State Department of Mental Health and State Department of Health.

OK-CARE was developed by the University of Oklahoma Health Sciences Center; representatives of the Oklahoma State Departments of Health, Human Services, and Mental Health; the Oklahoma Dental Association, Oklahoma Nurses Association and the Oklahoma State Medical Association; the Oklahoma Medical Center; and the Oklahoma State University College of Osteopathic Medicine/Area Health Education Centers. These representatives serve on the Advisory Board to OK-CARE, which meets monthly. Involvement of other agencies is solicited through the Advisory Council, which meets semiannually. Council members provide input to the Advisory Board on education and training needs, serve on committees, assist in developing and delivering programs and otherwise generate ideas for activities of the Center.

OK-CARE is staffed by: Jennifer Johnson, MD (Program Director); Mary Enterline, RN (Administrative Director); and Lori Oorjitham (Staff Assistant). Five OUHSC faculty members serve as consultants: Nancy K. Hall, PhD; Ronald S. Krug, PhD; Philip J. Rettig, MD; Leonard N. Slater, MD; and Stephen K. Young, DDS.

OK-CARE is located in Room 418 of the OUHSC Library, 1000 Stanton L. Young Boulevard, Oklahoma City (mailing address: Library Room 418, PO Box 26901, Oklahoma City, OK 73190). Telephone number is 405-271-6544. Clinicians who wish immediate consultation regarding patient management may call the Regional Education and Training Center Hotline at 800-548-4659.

From *Oklahoma AIDS Update*, Vol. 89, No. 2, February 1989, p 1. Reprinted with permission, Oklahoma State Department of Health.

How short is short?

Synthetic growth hormone creates clinical and ethical dilemmas

The availability of synthetic growth hormone (GH), made possible by recombinant DNA technology, has created clinical and ethical dilemmas for physicians treating children of short stature who are not deficient in natural GH.

Only short children with documented deficiency of natural growth hormone secretion should be treated with newly available synthetic GH, say authors John Lantos, MD, and colleagues at the University of Chicago's Pritzker School of Medicine. Their report appears in the February 17 *Journal of the American Medical Association*.

Related article on p 159.

There is a great interest in the therapy among parents of short children, doctors, and GH manufacturers. Synthetic GH currently is approved only for treating growth failure caused by inadequate natural GH secretion, but also has been used to treat short children who are not GH-deficient, even though its efficacy in increasing the final adult height in these children is not yet known, the authors write.

By definition, the authors say, 90,000 of the 3 million children born each year in the US will be below the third percentile for height and may be considered candidates for GH treatment, which may last five years at a cost of $20,000 per year for a child weighing 66 lbs. If all such children received five years of therapy, the GH required would cost $8 billion to $10 billion a year, they say.

"The clinical dilemmas involve questions of efficacy and safety, ie, who will grow in response to GH and what are the risks of such therapy," the authors say. "The ethical issues concern whether medical intervention for short, non-GH-deficient children is justified, even if it is safe and effective." They question whether therapy for non-GH-deficient short children should be accepted as an attempt to maximize physical potential and prevent potential psychosocial problems, or whether short stature should be considered a normal human variation for

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GROWTH HORMONE *(continued)*

which treatment represents unwarranted tampering with nature.

To answer this question, the authors compare GH with other treatments parents and pediatricians consider ethically acceptable for non-life-threatening conditions in children. "At this time, we would consider GH therapy ethically acceptable treatment for children who have classically defined GH deficiency," they write. These children have a biochemical abnormality that causes short stature so severe that it predictably causes psychosocial problems. GH's efficacy in increasing adult height for these children is established; so for them, the benefits of therapy clearly outweigh its burdens, the authors say.

However, the report says, "for children who are relatively short but have no documented GH abnormality, normal growth velocity, and predicted adult height above the fifth percentile, we suggest that GH therapy is not routinely indicated. This condition does not fit any current concept of disease state, there is no good evidence that such children are at risk for psychosocial morbidity, and their appearance would not be so abnormal that burdensome and potentially risky cosmetic therapy would be justified.

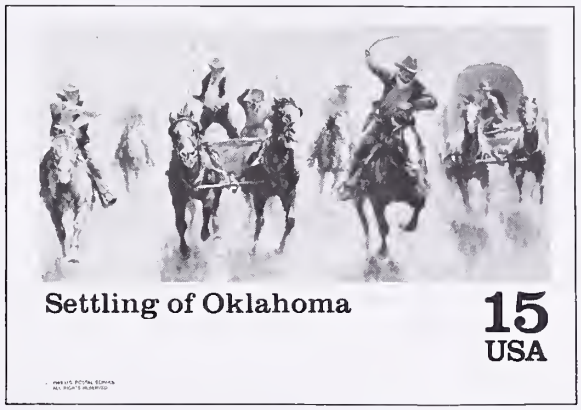
"Until studies show that GH improves psychosocial adjustment in short, non-GH-deficient children, GH use cannot be justified by claiming that it provides psychosocial benefits," they add. Although the long-term risks of GH therapy are not known, "excessive GH may contribute to diabetes, hypertension, and an increaed incidence of atherosclerotic heart disease," they say. The authors note that the benefits of GH in altering adult height or improving psychosocial adaptation also will not be known for some time, and the three to seven injections parents must give their children each week are a considerable burden.

"If the benefits of GH therapy were more reliably documented, or the physical and economic burdens of therapy were lower, or the data showing minimal risks from GH therapy were firmer, then the arguments against therapy would weaken," the authors say. "There would then be more room for parental discretion in deciding whether GH therapy was truly in a child's best interest."

"If pediatricians do not respond to these dilemmas thoughtfully, carefully, and forcefully, other decision makers, whose decisions may reflect political, social, or market forces, may then respond in ways that do not reflect the best interests of children," they conclude.

This month's cover

Postal Service joins Oklahoma in celebration of early settlement



Featured on a new commemorative post card and on this month's JOURNAL cover is a portion of the painting *Opening of the Cherokee Strip* by Olaf Wieghorst.

The painting, owned by the Ardmore Institute of Health, was selected for the United States Postal Service by the Citizens' Stamp Advisory Committee. The committee felt Weighorst's work, currently on display at the Gilcrease Museum in Tulsa, best depicts the first non-Indian settlement of what is now Oklahoma.

The card itself recognizes three milestones in the state's history: the Land Run of 1889, the establishment of Oklahoma Territory in 1890, and the Cherokee Strip Run in 1893.

Governor Henry Bellmon and Postal Service Governor Bert Mackie will join Regional Postmaster General William A. Campbell, Jr., in dedicating the card in Guthrie, the state's first capital, on April 22. The ceremony will be one of many activities that day celebrating the centennial of the first run in 1889.

Oklahoma
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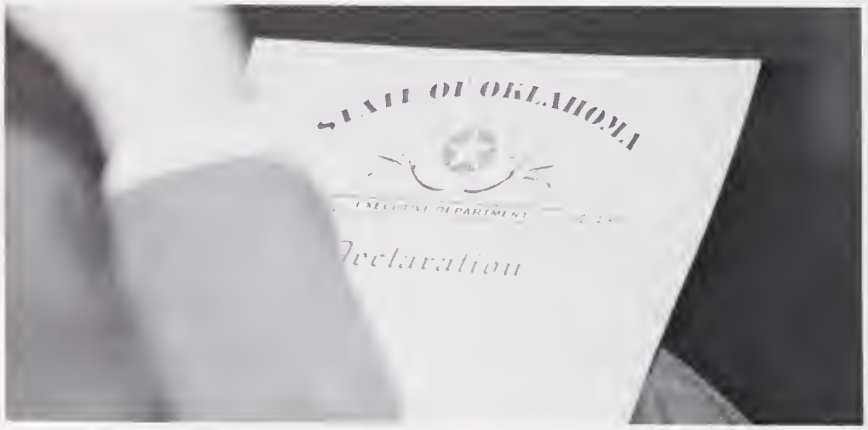
Visitors crowd the Oklahoma State Capitol rotunda to register for Medicine Day. Registration this year reached 250.

AMA Trustee Jerald R. Schenken, MD, guest speaker from Omaha, talks about his congressional campaign last fall.



OSMA President Ray V. McIntyre, MD, holds the official Medicine Day declaration presented to him by Governor Henry Bellmon. The governor was one of Medicine Day's featured speakers.

Physicians, spouses, legislators, and capitol staff help themselves to a special luncheon buffet served on the rotunda. Almost 1000 lunches were served.

There's no time like the present

MEDICINE DAY

MARCH 8, 1989

Medicine Day participants (above) walk from the capitol to the Historical Society Auditorium for the morning program.

Introducing themselves before joining Dr Jerald Schenken in the morning's panel discussion are (l to r) Bruce L. Storms, MD, Chickasha; Daniel M. Lane, MD, Oklahoma City; and John W. Bumpus, MD, Bethany. Panelists talked about their personal experiences in the political arena.

At lunch on the rotunda, Representative Joe L. Heaton (R-Okla City) (center) sits between constituents Dr and Mrs Roland Walters.

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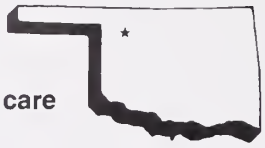

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Tulsa to host 83rd Annual Meeting of OSMA House of Delegates

The 83rd Annual Meeting of the Oklahoma State Medical Association will be held May 4-6, 1989, in the Sheraton Kensington Hotel, Tulsa.

The OSMA Board of Trustees will convene on Thursday afternoon, May 4. On Thursday evening, the University of Oklahoma College of Medicine will host its annual dinner dance, honoring OU's Physician of the Year and Amicus Medicinae Award recipient.

Opening Session of the OSMA House of Delegates will begin at 9 AM, Friday, May 5, with Reference Committees following at 10:30.

Oklahoma physicians and their spouses are invited to attend the annual luncheon sponsored by the OSMA Auxiliary, this year featuring a fashion show from Saks Fifth Avenue. The luncheon is at 12:30 Friday.

Friday afternoon, the OU College of Medicine will conduct a continuing medical education program including sessions on sports medicine, peripheral vascular surgery, and peripheral vascular angioplasty.

Friday evening's entertainment begins with a 6 PM reception honoring incoming OSMA President John R. Alexander, MD, Tulsa, and welcoming back to Oklahoma Edward N. Brandt, Jr., MD, new dean of the OU College of Medicine.

The University of Oklahoma "Sing, America, Sing" musical review will entertain after the Presidential Banquet on Friday night.

The Closing Session of the House of Delegates will begin at 9 AM, Saturday, May 6, followed in the afternoon by a PLICO Loss Prevention Seminar.

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BOOK SHOP

Neurology. By J.L. Bernat, MD, and F.M. Vincent, MD. Oradell, NJ: Medical Economics Books, 1987, pp 645 with 23 illustrations. Price $42.65 (hardbound).

With the many fine texts and monographs on general neurology that are available, it would appear difficult for a new work to find a niche. Bernat and Vincent have attempted to fill a niche by publishing a "user-friendly" textbook of general neurology which would provide a ready reference for the general practitioner without creating another "manual for the house officer." In large part, they succeeded.

Neurology is an easily readable and relatively comprehensive textbook of general neurology. It has a logical organization which begins with a section on neurologic assessment. Special chapters are devoted to the neurologic examination of the pediatric patient, as well as a chapter on the geriatric patient. A short chapter on lumbar puncture, including interpretation of findings, is included and is a welcome addition to the usual textbook of neurology.

The second section includes a problem-oriented discussion of relatively common presenting neurologic signs and symptoms, such as weakness, school failure, headache, and back and neck pain.

The third section is a disease-oriented organization which takes topics such as cerebrovascular disease, movement disorders, and neurologic complications of systemic illnesses and gives a rather complete discussion of each problem. The organization of this third section is consistently uniform, beginning with the clinical significance of each entity under discussion and continuing with a discussion of etiology, symptoms and signs, laboratory evaluation, and management. Most of the headings have a separate discussion, which the primary care physician should find most useful, on when to consult the neurological specialist. Some discussion about patient education is also often included.

A fourth section in the overall organization of this monograph is on neurologic emergencies and covers coma, intracranial hemorrhage, brain and spinal cord trauma, status epilepticus, and spinal cord compression. The organization used in these sections is the same as used in the disease-oriented section and the symptom-oriented section, giving a unity to the whole work. An uncommon, but very pleasing, addition to this particular monograph is an index to resources, including national federations and support groups for patients and families suffering from varying neurological illnesses. The list runs from Alcoholics Anonymous through the Association for Brain Tumor Research and then also includes a list of miscellaneous organizations such as the National Institute of Neurological and Communication Disorders and Stroke, the National Health Information Clearinghouse, various tissue banks of importance to patients and families with neurological disorders, and other "umbrella" organizations. The availability of this comprehensive list of re-

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1989

Michael Bailey McCarty, MD	January 22
Alexander Shadid, MD	February 2
Moorman Paul Prosser, MD	February 12
Robert Vern Weger, MD	February 18

sources, where a physician could refer patients for more information and help with their Parkinson's disease, multiple sclerosis, or Alzheimer's disease, may well be worth the purchase price of the book in and of itself.

If there is a shortcoming to this monograph, it is the failure to give proper emphasis to the revolution in neurology that has occurred over the last decade and a half because of the advances in neuroimaging. Unfortunately, there are only a few illustrations in this work. There is only one illustration of a CT scan in the entire volume. Much of the educational value of the book would have been enhanced by providing appropriate illustrations of representative neuroimaging findings in the disorders discussed. Although this might have raised the cost of the volume to an unacceptable range, it would have rounded out the volume. This sad lack is partially compensated for by the plethora of well-made, pertinent, and complete tables which are present throughout the book.

I think *Neurology* is a worthwhile purchase and should find a niche in the libraries of most family practitioners, internists, and generalists.

—Gary B. Bobele, MD
Oklahoma City

Diagnostic Imaging of Child Abuse. By Paul K. Kleinman, MD, with 8 contributors. Baltimore: The Williams and Wilkins Company, 1987. 280 pages with 212 illustrations and 8 tables. Price not given.

Among our most cherished beliefs are those that say human nature makes parents rear their children with good intentions and tender loving care. Evidence to the contrary, demonstrated by the frequency with which some parents harm or fail to care for their children, has forced us to recognize that child abuse and neglect are within the range of human behavior.

For the past twenty years, the rapid growth of our awareness of child abuse and neglect has led to an increase in medical literature about the problem and its diagnosis and treatment. Several excellent although brief discussions of the radiologic findings in child abuse are included in general pediatric textbooks and in most general radiology and pediatric radiology textbooks. This is the first textbook dealing exclusively with the use of radiology and other imaging modalities in dealing with child abuse.

The author's stated purpose is to provide a textbook devoted to the radiologic changes found in victims of child abuse, taking into account recent advances in nuclear imaging, computed tomography,

DEATHS

Michael Bailey McCarty, MD
1944 - 1989

Michael B. McCarty, MD, a Tulsa psychiatrist, died January 22, 1989. The Oklahoma City native earned his medical degree at the University of Oklahoma College of Medicine in 1971. He completed a residency in child psychiatry at Washington University School of Medicine, St Louis, and moved to Tulsa in 1982 following four years of practice in Missouri.

Moorman Paul Prosser, MD
1910 - 1989

Oklahoma City psychiatrist Moorman P. Prosser, MD, died February 12, 1989. A 1935 graduate of the University of Oklahoma School of Medicine and clinical professor of psychiatry and the behavioral sciences, Dr Prosser was born in Kansas City, Mo. His practice in Norman, established in 1938, was interrupted by service in the US Army. Dr Prosser moved to Oklahoma City in 1948.

Alexander Shadid, MD
1914 - 1989

OSMA Life Member Alexander Shadid, MD, Elk City, died February 2, 1989. A general practitioner, Dr Shadid was born in Carter, Okla, and graduated from the University of Tennessee Center for Health Sciences, Memphis, in 1938. He moved to Elk City upon completion of his internship in 1939 and later served two years on active military duty during World War II.

Robert Vern Weger, MD
1948 - 1989

Robert V. Weger, MD, a Tulsa surgeon specializing in peripheral vascular surgery, died February 18, 1989. A native of Midland, Tex, Dr Weger served with the Oklahoma Army National Guard from 1969 to 1971. He was graduated from the University of Oklahoma College of Medicine in 1976. In addition to his practice, he was an instructor at the University of Oklahoma Tulsa Medical College.

and magnetic resonance imaging. This textbook is more than that, however. It also includes information on additional related areas to help those dealing with child abuse in fulfilling legal responsibilities and handling psychosocial issues.

The introductory chapter sets the stage, weaving child abuse into the context of family violence and defining the role of the radiologist as consultant. The last chapter for "the reader unfamiliar with medical imaging" clearly, simply, and succinctly describes image production, imaging modalities and procedures, and the benefits and risks of diagnostic imaging in children.

The material presented is timely. Nowhere else has there been such a complete and lucid discussion of the topic. The evenness of presentation by the contributors is striking. The chapter on dating fractures is unique. The illustrations are uniformly of fine quality. The references, 747 in all, are evidence of the author's exhaustive search of the world literature.

This is a handsome book. The quality of the paper and print is high, and the editors have produced a book that is attractive. This is a long overdue book for all physicians who treat children. It should be on the shelf of everyone who does pediatric imaging. It is also appropriate as a medical library reference.

—Teresa M. Stacy, MD
Oklahoma City

How to Examine the Nervous System. By R.T. Ross. New York: Medical Examination Publishing Company, 1985, 274 pages, price $19.95.

The format of this book is logical and the printing is above average with excellent illustrations. Throughout the book, Doctor Ross emphasizes the importance of the neurological examination in diagnosis and in localizing lesions.

The first seven chapters of this book pertain to the examination of the eye and abnormal movements of the eye, areas which must be thoroughly understood by house officers in neurology in order to understand localizing lesions. The first fifteen pages are devoted to the use of the ophthalmoscope and correct interpretation of funduscopic findings.

The only shortcoming of this book is the lack of space devoted to the brachial and lumbosacral plexuses. An important part of clinical neurology was not covered. I hope that in the next edition this will be corrected.

On the whole, as I mentioned, the author has done an excellent job in covering this important subject. I think this book should be read by every fourth-year medical student, and trainees in neurology and neurosurgery would benefit from this book.

—P.A. Noorani, MD
Oklahoma City

Primary Care of Cancer: Recommendations for Screening, Diagnosis and Management. Edited by Edward A. Mortimer, Jr., MD, et al. Cleveland: Case Western Reserve University School of Medicine, 1987, pp 190. Price not given.

This manual was developed by members of the faculty of Case Western Reserve University School of

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Medicine in collaboration with and supported by a grant from the American Cancer Society, Cuyahoga County Unit. The manual was written to provide a concise practical guide to what the primary care practitioner can do in reducing cancer mortality. Emphasis is placed on those things that primary care physicians can do to help prevent and control cancer in their patients.

The thirty most common cancers in Northeast Ohio are addressed in individual chapters. The format of each chapter is uniform, discussing first a description of the cancer, then epidemiology and risk factors, etiology, prevention, screening, symptoms and signs, diagnostic tests, treatment, prognosis and posttreatment follow-up. Epidemiology, risk factors, etiology, prevention, and screening are particularly emphasized for each cancer.

This book provides a quick reference for primary physicians who provide preventive and early detection techniques. It also will identify patients who are at risk for developing specific cancers due to hereditary, occupational, or life-style influences. The manual does not give exhaustive review of the natural history of various cancers, signs or symptoms, or diagnostic steps. Treatment is discussed in a general sense only so that the physician can have a conceptual grasp of what treatment modalities are available and what general results can be expected. Details of specific treatment protocols are not delved into. Thus the manual is not of great value in guiding a physician through a diagnostic evaluation or determination of treatment.

The manual is easily read and, due to the structured format, specific information such as screening for each cancer is readily identified. It will serve the purpose for which it is written quite admirably, ie, a quick reference manual for general information concerning specific malignancies. Unfortunately the authors of the various chapters are not identified, and the chapters are not annotated. Five general references are supplied at the end of the manual for those who wish more detailed discussion. Areas of controversy have been identified but are not discussed in depth, leaving the reader aware of differing opinions without burdening him or her with the details of the controversies.

Recognizing the rapid changes in our knowledge of cancer, the investment in money and in time reading are not excessive, and the manual can be readily replaced as it becomes obsolete. The authors do express an intent to produce further editions as necessary in order to keep the manual current. The book will serve a useful purpose as an initial reference to help guide a physician in either the education of or management of patients at risk for cancer.

—William L. Hughes, MD
Oklahoma City

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Self Assessment of Current Knowledge in Infectious Diseases. By Richard V. McCloskey. Flushing, New York: Medical Examination Publishing Co., 1979. Pp 188, price $10.00.

This manual is divided into eight major sections dealing with such topics as virology, antimicrobial agents and therapy, immunology and physiology, and differential diagnosis. It contains 1,241 questions on all aspects of infectious diseases. Each question gives the pertinent literature citation. The answers to the questions are grouped together at the end of the manual.

—Harris D. Riley, Jr., MD
Oklahoma City

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Please see brief summary of prescribing information on next page.

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CARDIZEM® SR
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Sustained Release Capsules
CONTRAINDICATIONS

CARDIZEM is contraindicated in (1) patients with sick sinus syndrome except in the presence of a functioning ventricular pacemaker, (2) patients with second- or third-degree AV block except in the presence of a functioning ventricular pacemaker, (3) patients with hypotension (less than 90 mm Hg systolic), (4) patients who have demonstrated hypersensitivity to the drug, and (5) patients with acute myocardial infarction and pulmonary congestion documented by x-ray on admission.

WARNINGS

1. **Cardiac Conduction.** CARDIZEM prolongs AV node refractory periods without significantly prolonging sinus node recovery time, except in patients with sick sinus syndrome. This effect may rarely result in abnormally slow heart rates (particularly in patients with sick sinus syndrome) or second- or third-degree AV block (nine of 2,111 patients or 0.43%). Concomitant use of diltiazem with beta-blockers or digitalis may result in additive effects on cardiac conduction. A patient with Prinzmetal's angina developed periods of asystole (2 to 5 seconds) after a single dose of 60 mg of diltiazem.
2. **Congestive Heart Failure.** Although diltiazem has a negative inotropic effect in isolated animal tissue preparations, hemodynamic studies in humans with normal ventricular function have not shown a reduction in cardiac index nor consistent negative effects on contractility (dp/dt). An acute study of oral diltiazem in patients with impaired ventricular function (ejection fraction 24% ± 6%) showed improvement in indices of ventricular function without significant decrease in contractile function (dp/dt). Experience with the use of CARDIZEM (diltiazem hydrochloride) in combination with beta-blockers in patients with impaired ventricular function is limited. Caution should be exercised when using this combination.
3. **Hypotension.** Decreases in blood pressure associated with CARDIZEM therapy may occasionally result in symptomatic hypotension.
4. **Acute Hepatic Injury.** Mild elevations of transaminases with and without concomitant elevation in alkaline phosphatase and bilirubin have been observed in clinical studies. Such elevations were usually transient and frequently resolved even with continued diltiazem treatment. In rare instances, significant elevations in enzymes such as alkaline phosphatase, LDH, SGOT, SGPT, and other phenomena consistent with acute hepatic injury have been noted. These reactions tended to occur early after therapy initiation (1 to 8 weeks) and have been reversible upon discontinuation of drug therapy. The relationship to CARDIZEM is uncertain in some cases, but probable in some. (See PRECAUTIONS.)

PRECAUTIONS

General. CARDIZEM (diltiazem hydrochloride) is extensively metabolized by the liver and excreted by the kidneys and in bile. As with any drug given over prolonged periods, laboratory parameters should be monitored at regular intervals. The drug should be used with caution in patients with impaired renal or hepatic function. In subacute and chronic dog and rat studies designed to produce toxicity, high doses of diltiazem were associated with hepatic damage. In special subacute hepatic studies, oral doses of 125 mg/kg and higher in rats were associated with histological changes in the liver which were reversible when the drug was discontinued. In dogs, doses of 20 mg/kg were also associated with hepatic changes, however, these changes were reversible with continued dosing.

Dermatological events (see ADVERSE REACTIONS section) may be transient and may disappear despite continued use of CARDIZEM. However, skin eruptions progressing to erythema multiforme and/or exfoliative dermatitis have also been infrequently reported. Should a dermatologic reaction persist, the drug should be discontinued.

Drug Interaction. Due to the potential for additive effects, caution and careful titration are warranted in patients receiving CARDIZEM concomitantly with any agents known to affect cardiac contractility and/or conduction. (See WARNINGS.) Pharmacologic studies indicate that there may be additive effects in prolonging AV conduction when using beta-blockers or digitalis concomitantly with CARDIZEM. (See WARNINGS.)

As with all drugs, care should be exercised when treating patients with multiple medications. CARDIZEM undergoes biotransformation by cytochrome P-450 mixed function oxidase. Coadministration of CARDIZEM with other agents which follow the same route of biotransformation may result in the competitive inhibition of metabolism. Dosages of similarly metabolized drugs, particularly those of low therapeutic ratio or in patients with renal and/or hepatic impairment, may require adjustment when starting or stopping concomitantly administered CARDIZEM to maintain optimum therapeutic blood levels.

Beta-blockers: Controlled and uncontrolled domestic studies suggest that concomitant use of CARDIZEM and beta-blockers or digitalis is usually well tolerated, but available data are not sufficient to predict the effects of concomitant treatment in patients with left ventricular dysfunction or cardiac conduction abnormalities.

Administration of CARDIZEM (diltiazem hydrochloride) concomitantly with propranolol in five normal volunteers resulted in increased propranolol levels in all subjects and bioavailability of propranolol was increased approximately 50%. If combination therapy is initiated or withdrawn in conjunction with propranolol, an adjustment in the propranolol dose may be warranted. (See WARNINGS.)

Cimetidine: A study in six healthy volunteers has shown a significant increase in peak diltiazem plasma levels (58%) and area-under-the-curve (53%) after a 1-week course of cimetidine at 1,200 mg per day and diltiazem 60 mg per day. Ranitidine produced smaller, nonsignificant increases. The effect may be mediated by cimetidine's known inhibition of hepatic cytochrome P-450, the enzyme system probably responsible for the first-pass metabolism of diltiazem. Patients currently receiving diltiazem therapy should be carefully monitored for a change in pharmacological effect when initiating and discontinuing therapy with cimetidine. An adjustment in the diltiazem dose may be warranted.

Digitalis: Administration of CARDIZEM with digoxin in 24 healthy male subjects increased plasma digoxin concentrations approximately 20%. Another investigator found no increase in digoxin levels in 12 patients with coronary artery disease. Since there have been conflicting results regarding the effect of digoxin levels, it is recommended that digoxin levels be monitored when initiating, adjusting, and discontinuing CARDIZEM therapy to avoid possible over- or under-digitalization. (See WARNINGS.)

Anesthetics: The depression of cardiac contractility, conductivity, and automaticity as well as the vascular dilation associated with anesthetics may be potentiated by calcium channel blockers. When used concomitantly, anesthetics and calcium blockers should be titrated carefully.

Carcinogenesis, Mutagenesis, Impairment of Fertility. A 24-month study in rats and a 21-month study in mice showed no evidence of carcinogenicity. There was also no mutagenic response in in vitro bacterial tests. No intrinsic effect on fertility was observed in rats.

Pregnancy. Category C. Reproduction studies have been conducted in mice, rats, and rabbits. Administration of doses ranging from five to ten times greater (on a mg/kg basis) than the daily recommended therapeutic dose has resulted in embryo and fetal lethality. These doses, in some studies, have been reported to cause skeletal abnormalities. In the perinatal/postnatal studies, there was some reduction in early individual pup weights and survival rates. There was an increased incidence of stillbirths at doses of 20 times the human dose or greater.

There are no well-controlled studies in pregnant women; therefore, use CARDIZEM in pregnant women only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers. Diltiazem is excreted in human milk. One report suggests that concentrations in breast milk may approximate serum levels. If use of CARDIZEM is deemed essential, an alternative method of infant feeding should be instituted.

Pediatric Use. Safety and effectiveness in children have not been established.

ADVERSE REACTIONS

Serious adverse reactions have been rare in studies carried out to date, but it should be recognized that patients with impaired ventricular function and cardiac conduction abnormalities have usually been excluded from these studies.

The adverse events described below represent events observed in clinical studies of hypertensive patients receiving either CARDIZEM Tablets or CARDIZEM SR Capsules as well as experiences observed in studies of angina and during marketing. The most common events in hypertension studies are shown in a table with rates in placebo patients shown for comparison. Less common events are listed by body system; these include any adverse reactions seen in angina studies that were not observed in hypertension studies. In all hypertensive patients studied (over 900), the most common adverse events were edema (9%), headache (8%), dizziness (6%), asthenia (5%), sinus bradycardia (3%), flushing (3%), and 1° AV block (3%). Only edema and perhaps bradycardia and dizziness were dose related. The most common events observed in clinical studies (over 2,100 patients) of angina patients and hypertensive patients receiving CARDIZEM Tablets or CARDIZEM SR Capsules were (ie, greater than 1%) edema (5.4%), headache (4.5%), dizziness (3.4%), asthenia (2.8%), first-degree AV block (1.8%), flushing (1.7%), nausea (1.6%), bradycardia (1.5%), and rash (1.5%).

DOUBLE BLIND PLACEBO CONTROLLED HYPERTENSION TRIALS

Adverse	Diltiazem N=315 # pts (%)	Placebo N=211 # pts (%)
headache	38 (12%)	17 (8%)
AV block first degree	24 (7.6%)	4 (1.9%)
dizziness	22 (7%)	6 (2.8%)
edema	19 (6%)	2 (0.9%)
bradycardia	19 (6%)	3 (1.4%)
ECG abnormality	13 (4.1%)	3 (1.4%)
asthenia	10 (3.2%)	1 (0.5%)
constipation	5 (1.6%)	2 (0.9%)
dyspepsia	4 (1.3%)	1 (0.5%)
nausea	4 (1.3%)	2 (0.9%)
palpitations	4 (1.3%)	2 (0.9%)
polyuria	4 (1.3%)	2 (0.9%)
somnolence	4 (1.3%)	—
alk phos increase	3 (1%)	1 (0.5%)
hypotension	3 (1%)	1 (0.5%)
insomnia	3 (1%)	1 (0.5%)
rash	3 (1%)	1 (0.5%)
AV block second degree	2 (0.6%)	—

In addition, the following events were reported infrequently (less than 1%) or have been observed in angina trials. In many cases, the relation to drug is uncertain.

Cardiovascular: Angina, arrhythmia, bundle branch block, tachycardia, ventricular extrasystoles, congestive heart failure, syncope.
Nervous System: Amnesia, depression, gait abnormality, hallucinations, nervousness, paresthesia, personality change, tinnitus, tremor, abnormal dreams.
Gastrointestinal: Anorexia, diarrhea, dysgeusia, mild elevations of SGOT, SGPT, and LDH (see hepatic warnings), vomiting, weight increase, thirst.
Dermatological: Petechiae, pruritus, photosensitivity, urticaria.
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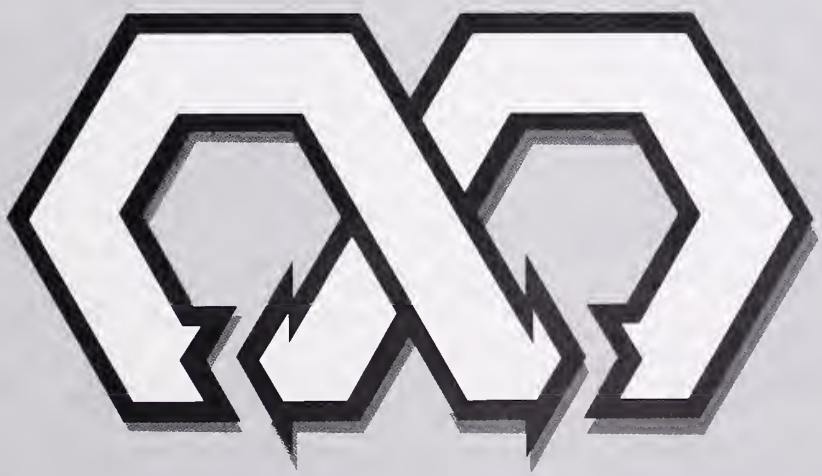

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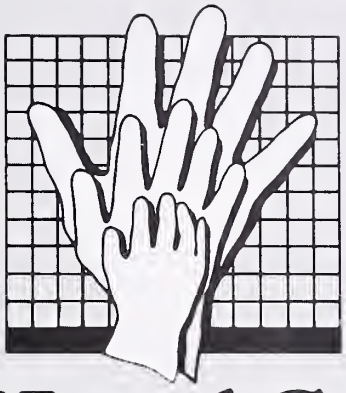

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INSTRUCTIONS FOR AUTHORS

Contributions

Articles submitted for publication, including Annual Meeting papers, become the sole property of the JOURNAL and must not have been published elsewhere. The Editorial Board reserves the right to edit any material submitted. Manuscripts must be typewritten, double-spaced, and submitted in duplicate. Receipt of manuscripts will be acknowledged, and unpublished manuscripts will be returned. The JOURNAL does not assume responsibility for the statements or opinions of any contributor.

Style

All manuscripts should adhere to the style adopted by the American Medical Association as illustrated in *JAMA* and detailed in the AMA's *Manual for Authors & Editors*. Footnotes, bibliographies, and legends for illustrations should be typewritten, double-spaced, on separate sheets. References are to be listed in the order of their appearance in the article.

Illustrations

Illustrations other than the author's will not be accepted for publication unless accompanied by written permission from the original source. Illustrations should be labeled with the author's name and must be numbered in the order in which they are referred to in the article. The quality of all illustrations must be in keeping with the quality of the magazine.

News

Readers are encouraged to submit news items of interest to Oklahoma physicians. Where dates of meetings, etc, are important, please remember that each issue closes on the first day of the *preceding* month and reaches subscribers in the latter half of the month of publication.

Reprints

Authors will receive reprint order forms from the Transcript Press, 222 East Eufaula, Norman, Oklahoma 73069, prior to publication of their articles. Other requests for reprints must be made to the Transcript Press within 30 days after publication.

Back Issues

Microfilm copies of back issues of the JOURNAL can be purchased from University Microfilms International, 300 North Zeeb Road, Ann Arbor, Michigan 48106.

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State Convention 1989

The Oklahoma State Medical Association Auxiliary will hold its state convention this year once again with the OSMA. The convention will be held at the Sheraton Kensington Hotel, 1902 East 71st Street, Tulsa, Oklahoma. The dates are May 4, 5, and 6.

The auxiliary will begin its activities with a board luncheon directly before the pre-convention board meeting at noon Thursday. After the board meeting, those who have signed up for the Delights of Tulsa tour will depart the hotel at 2 o'clock. There is a limit of 45 persons.

This tour will take us by the Council Oak Tree, which is the exact spot where Tulsa began as an Indian campfire at the end of the Trail of Tears. The tour will then drive through the Maple Ridge residential area where one can quickly get a flavor of Tulsa from the sites and the stories of the homes. The tour will stop at the W.G. Skelly mansion, 2101 South Madison, to tour the home. The present owner, Mrs John Walton, will tell the history of this lovely home, built by the founder of Skelly Oil Company in the heart of Maple Ridge.

From there, the tour proceeds to the Philbrook Museum area to tour the home of Charles Faudree, one of Tulsa's leading interior designers. This home was originally created by Beulah Larson, an antique collector. She bought the home in 1952 but purchased it in pieces, moving "the house" to Tulsa in piecemeal fashion. Several houses were acquired in Connecticut and put together in authentic fashion. Every window pane, ceiling beam, the staircase — even the porch stone came from another New England salt box house. (Reprinted from *Oklahoma Home and Lifestyle,* September/October 1988.) Since then, Charles Faudree has added a wonderful addition.

The third and last house of the tour, in the Forrest Hills area of Tulsa, is owned by Dr and Mrs Robert Stanley White. The house was built in 1928-29 as a gateway to this area. The original owner was a Tulsa oil man, his mistress, and her daughter. This house, with all its furnishings, was sold at the height of the Depression for $19,000 cash. High tea will be served here.

The tour will return to the hotel in time for all to get ready for the evening social events, more specifically, the OU Alumni Dinner Dance.

Friday morning will begin with two breakfasts, one honoring the auxiliary's past presidents and the other for the county presidents and presidents-elect. Our House of Delegates will convene at 9:30 AM. At this time we will hear addresses from AMA Auxiliary President-Elect Jean Hill (Mrs J. Edward) and Barbara Thibodeaux (Mrs David), president of the SMA Auxiliary. Our new officers will be installed, and we will also have our memorial service for deceased auxilians.

After the House of Delegates adjourns, our spouses are invited to join us for lunch and a showing of fashions from Saks Fifth Avenue, Utica Square, Tulsa. Proceeds will benefit AMA-ERF. The afternoon is free for shopping, sports, or whatever.

Friday evening, prior to dinner, the OSMA will host a reception honoring Dr John R. Alexander, OSMA president-elect, and Dr Edward Brandt, dean of the OU College of Medicine. After dinner the entertainment will be the Sing America Sing Review from the OU School of Music.

Our convention will end Saturday after the post-convention board meeting.

Convention '89!! Don't forget it; mark your calendar *now* and send in your registration as soon as possible. Remember May 4-6!!

—Nora White
OSMAA Convention Chairperson

■ **Ronald O. Gilcher, MD, director of the Oklahoma** Blood Institute in Oklahoma City, was recently named recipient of the South Central Association of Blood Banks (SCABB) Scientific Annual Lecture Award. He was honored at the annual SCABB meeting in March, where he presented his award lecture. The Annual Lecture is given in honor of Dr Robert Race, a pioneer in the field of immunohematology.

■ **Oklahoma City neurosurgeon Stanley** Pelofsky, MD, was officially recognized by the Oklahoma State Legislature on February 15. Lawmakers commended Dr Pelofsky for his educational efforts to minimize brain and spinal column injury risks among young students. Representative Jeff Hamilton (D-Midwest City), author of a resolution to recognize Dr Pelofsky's efforts, said the physician "has undertaken on his own time, to present school programs to help young people avoid such life threatening accidents." Dr Pelofsky has developed a one-hour program for junior and senior high school students; for information call the Oklahoma Head Injury Foundation, (405) 556-0147.

■ **The 1988-89 Dean's Lecture Series, sponsored** by the University of Oklahoma College of Medicine, will present "Transplants — The Gift of Life" on Tuesday, May 16. Faculty member Larry R. Pennington, MD, will deliver the 6 PM lecture in the OU Health Sciences Center Library Auditorium. Among his topics will be new drugs to prevent organ rejection, new methods of diagnosing rejection, pancreas transplants for treatment of diabetes, improving numbers of donors, insurance coverage, and refinements of technique. All lectures in the series are open to the public, and there is no admission charge. For information, call the Office of the Dean, OU College of Medicine, (405) 271-2265.

■ **"Medicare Tomorrow — New Surprises" will** be the keynote presentation at the annual convention of the Oklahoma Medical Assistants Society on May 5, 6, and 7. Also scheduled are "Do You Really Want to Be a Bag Lady?" presented by Patsy Acers, a financial counselor, and Karen Carpenter, CPA; and "Mothers and Daughters, the Ambivalent Dyad," presented by Vee Gatch, PhD, and Jean Trousdale, PhD. The Friday through Sunday meeting will be held at the Territorial Best Western Inn in Guthrie. All medical assistants and other interested persons are invited to attend. For information call Billye Tripp, (405) 691-2041, or Terena Bailey, (405) 239-7134.

■ **The Oklahoma Transplant Society, an organi**zation dedicated to facilitating cooperative efforts among transplant programs, was founded in November 1988. Among its goals are educating medical and lay persons, facilitating the sharing of information, and working with the Texas Transplant Society in the sharing and local use of organs. Membership is open to everyone with an interest in organ transplantation within the state, says R.W. King, Jr., MD, Oklahoma City, the group's president. Annual membership dues are $30 and may be sent to the Oklahoma Transplant Society, Inc., PO Box 18612, Oklahoma City, OK 73154.

■ **Blood banks and transfusion services tradi**tionally have not been held liable in cases where patients contracted unavoidable transfusion-related diseases. But identification of new transfusion risks — such as AIDS — and "efforts to find new sources of compensation" may cause judges to develop new theories of liability, says a report in the March *Archives of Pathology and Laboratory Medicine*, a special issue highlighting the question of safety in transfusion practices. Author David E. Willett, JD, of the San Francisco law firm of Hassard, Bonnington, Rogers, and Huber, advises blood bank and transfusion service medical directors "to provide clinicians with information regarding current or emerging transfusion risks and alternatives such as autologous transfusion, urging communication to patients when informed consent is obtained," he writes.

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ntraindications: VASOTEC® (Enalapril Maleate, MSD) is contraindicated in patients who are hypersensitive to this duct and in patients with a history of angioedema related to previous treatment with an ACE inhibitor.

rnings: *Angioedema:* Angioedema of the face, extremities, lips, tongue, glottis, and/or larynx has been reported in ents treated with ACE inhibitors, including VASOTEC. In such cases, VASOTEC should be promptly discontinued and the ent carefully observed until the swelling disappears. In instances where swelling has been confined to the face and lips, condition has generally resolved without treatment, although antihistamines have been useful in relieving symptoms. gioedema associated with laryngeal edema may be fatal. **Where there is involvement of the tongue, glottis, or ynx likely to cause airway obstruction, appropriate therapy, e.g., subcutaneous epinephrine solution 000 (0.3 mL to 0.5 mL), should be promptly administered.** (See ADVERSE REACTIONS.)

otension: Excessive hypotension is rare in uncomplicated hypertensive patients treated with VASOTEC alone. Heart ure patients given VASOTEC commonly have some reduction in blood pressure, especially with the first dose, but continuation of therapy for continuing symptomatic hypotension usually is not necessary when dosing instructions followed; caution should be observed when initiating therapy. (See DOSAGE AND ADMINISTRATION.) Patients at for excessive hypotension, sometimes associated with oliguria and/or progressive azotemia and rarely with acute al failure and/or death, include those with the following conditions or characteristics: heart failure, hyponatremia, n-dose diuretic therapy, recent intensive diuresis or increase in diuretic dose, renal dialysis, or severe volume and/or depletion of any etiology. It may be advisable to eliminate the diuretic (except in heart failure patients), reduce the etic dose, or increase salt intake cautiously before initiating therapy with VASOTEC in patients at risk for excessive otension who are able to tolerate such adjustments. (See PRECAUTIONS, *Drug Interactions* and ADVERSE REACNS.) In patients at risk for excessive hypotension, therapy should be started under very close medical supervision such patients should be followed closely for the first two weeks of treatment and whenever the dose of enalapril /or diuretic is increased. Similar considerations may apply to patients with ischemic heart disease or cardiovascular ease in whom an excessive fall in blood pressure could result in a myocardial infarction or cerebrovascular accident. cessive hypotension occurs, the patient should be placed in supine position and, if necessary, receive an intrave- s infusion of normal saline. A transient hypotensive response is not a contraindication to further doses of VASOTEC, ch usually can be given without difficulty once the blood pressure has stabilized. If symptomatic hypotension elops, a dose reduction or discontinuation of VASOTEC or concomitant diuretic may be necessary.

tropenia/Agranulocytosis: Another ACE inhibitor, captopril, has been shown to cause agranulocytosis and bone mar- depression, rarely in uncomplicated patients but more frequently in patients with renal impairment, especially if they have a collagen vascular disease. Available data from clinical trials of enalapril are insufficient to show that enalapril s not cause agranulocytosis at similar rates. Foreign marketing experience has revealed several cases of neutropenia granulocytosis in which a causal relationship to enalapril cannot be excluded. Periodic monitoring of white blood cell nts in patients with collagen vascular disease and renal disease should be considered.

cautions: *General: Impaired Renal Function:* As a consequence of inhibiting the renin-angiotensin-aldosterone em, changes in renal function may be anticipated in susceptible individuals. In patients with severe heart failure se renal function may depend on the activity of the renin-angiotensin-aldosterone system, treatment with ACE bitors, including VASOTEC, may be associated with oliguria and/or progressive azotemia and rarely with acute renal re and/or death.

linical studies in hypertensive patients with unilateral or bilateral renal artery stenosis, increases in blood urea ogen and serum creatinine were observed in 20% of patients. These increases were almost always reversible upon ontinuation of enalapril and/or diuretic therapy. In such patients, renal function should be monitored during the first weeks of therapy.

e patients with hypertension or heart failure with no apparent preexisting renal vascular disease have developed eases in blood urea and serum creatinine, usually minor and transient, especially when VASOTEC has been given omitantly with a diuretic. This is more likely to occur in patients with preexisting renal impairment. Dosage reduc- and/or discontinuation of the diuretic and/or VASOTEC may be required.

luation of patients with hypertension or heart failure should always include assessment of renal ction. (See DOSAGE AND ADMINISTRATION.)

erkalemia: Elevated serum potassium (> 5.7 mEq/L) was observed in approximately 1% of hypertensive patients in ical trials. In most cases these were isolated values which resolved despite continued therapy. Hyperkalemia was se of discontinuation of therapy in 0.28% of hypertensive patients. In clinical trials in heart failure, hyperkalemia was erved in 3.8% of patients, but was not a cause for discontinuation.

k factors for the development of hyperkalemia include renal insufficiency, diabetes mellitus, and the concomitant use otassium-sparing diuretics, potassium supplements, and/or potassium-containing salt substitutes, which should sed cautiously, if at all, with VASOTEC. (See *Drug Interactions.*)

gery/Anesthesia: In patients undergoing major surgery or during anesthesia with agents that produce hypotension, lapril may block angiotensin II formation secondary to compensatory renin release. If hypotension occurs and is sidered to be due to this mechanism, it can be corrected by volume expansion.

rmation for Patients:

gioedema. Angioedema, including laryngeal edema, may occur especially following the first dose of enalapril. ents should be so advised and told to report immediately any signs or symptoms suggesting angioedema (swelling ace, extremities, eyes, lips, tongue, difficulty in swallowing or breathing) and to take no more drug until they have sulted with the prescribing physician.

otension. Patients should be cautioned to report lightheadedness especially during the first few days of therapy. If ial syncope occurs, the patients should be told to discontinue the drug until they have consulted with the prescribing sician.

patients should be cautioned that excessive perspiration and dehydration may lead to an excessive fall in blood ssure because of reduction in fluid volume. Other causes of volume depletion such as vomiting or diarrhea may also l to a fall in blood pressure; patients should be advised to consult with the physician.

erkalemia: Patients should be told not to use salt substitutes containing potassium without consulting their sician.

tropenia: Patients should be told to report promptly any indication of infection (e.g., sore throat, fever) which may be gn of neutropenia.

FE: As with many other drugs, certain advice to patients being treated with enalapril is warranted. This information is nded to aid in the safe and effective use of this medication. It is not a disclosure of all possible adverse or intended cts.

g Interactions:

otension: Patients on Diuretic Therapy: Patients on diuretics and especially those in whom diuretic therapy was ently instituted may occasionally experience an excessive reduction of blood pressure after initiation of therapy with lapril. The possibility of hypotensive effects with enalapril can be minimized by either discontinuing the diuretic or easing the salt intake prior to initiation of treatment with enalapril. If it is necessary to continue the diuretic, provide se medical supervision after the initial dose for at least two hours and until blood pressure has stabilized for at least an itional hour. (See WARNINGS and DOSAGE AND ADMINISTRATION.)

nts Causing Renin Release: The antihypertensive effect of VASOTEC is augmented by antihypertensive agents that se renin release (e.g., diuretics).

er Cardiovascular Agents: VASOTEC has been used concomitantly with beta-adrenergic-blocking agents, methyl- a, nitrates, calcium-blocking agents, hydralazine, prazosin, and digoxin without evidence of clinically significant erse interactions.

nts Increasing Serum Potassium: VASOTEC attenuates potassium loss caused by thiazide-type diuretics. Potas- n-sparing diuretics (e.g., spironolactone, triamterene, or amiloride), potassium supplements, or potassium-con- ing salt substitutes may lead to significant increases in serum potassium. Therefore, if concomitant use of these nts is indicated because of demonstrated hypokalemia, they should be used with caution and with frequent monitor- of serum potassium. Potassium-sparing agents should generally not be used in patients with heart failure receiving OTEC.

ium: A few cases of lithium toxicity have been reported in patients receiving concomitant VASOTEC and lithium and e reversible upon discontinuation of both drugs. Although a causal relationship has not been established, it is recom- nded that caution be exercised when lithium is used concomitantly with VASOTEC and serum lithium levels should be nitored frequently.

Pregnancy — Category C: There was no fetotoxicity or teratogenicity in rats treated with up to 200 mg/kg/day of enalapril (333 times the maximum human dose). Fetotoxicity, expressed as a decrease in average fetal weight, occurred in rats given 1200 mg/kg/day of enalapril but did not occur when these animals were supplemented with saline. Enalapril was not teratogenic in rabbits. However, maternal and fetal toxicity occurred in some rabbits at doses of 1 mg/kg/day or more. Saline supplementation prevented the maternal and fetal toxicity seen at doses of 3 and 10 mg/kg/day, but not at 30 mg/kg/day (50 times the maximum human dose).

Radioactivity was found to cross the placenta following administration of labeled enalapril to pregnant hamsters.

There are no adequate and well-controlled studies in pregnant women. VASOTEC® (Enalapril Maleate, MSD) should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers: Milk in lactating rats contains radioactivity following administration of ^{14}C enalapril maleate. It is not known whether this drug is secreted in human milk. Because many drugs are secreted in human milk, caution should be exercised when VASOTEC is given to a nursing mother.

Pediatric Use: Safety and effectiveness in children have not been established.

Adverse Reactions: VASOTEC has been evaluated for safety in more than 10,000 patients, including over 1000 patients treated for one year or more. VASOTEC has been found to be generally well tolerated in controlled clinical trials involving 2987 patients.

Hypertension: The most frequent clinical adverse experiences in controlled trials were: headache (5.2%), dizziness (4.3%), and fatigue (3%).

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in controlled clinical trials were: diarrhea (1.4%), nausea (1.4%), rash (1.4%), cough (1.3%), orthostatic effects (1.2%), and asthenia (1.1%).

Heart Failure: The most frequent clinical adverse experiences in both controlled and uncontrolled trials were: dizziness (7.9%), hypotension (6.7%), orthostatic effects (2.2%), syncope (2.2%), cough (2.2%), chest pain (2.1%), and diarrhea (2.1%).

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in both controlled and uncontrolled clinical trials were: fatigue (1.8%), headache (1.8%), abdominal pain (1.6%), asthenia (1.6%), orthostatic hypotension (1.6%), vertigo (1.6%), angina pectoris (1.5%), nausea (1.3%), vomiting (1.3%), bronchitis (1.3%), dyspnea (1.3%), urinary tract infection (1.3%), rash (1.3%), and myocardial infarction (1.2%).

Other serious clinical adverse experiences occurring since the drug was marketed or adverse experiences occurring in 0.5% to 1% of patients with hypertension or heart failure in clinical trials in order of decreasing severity within each category:

Cardiovascular: Myocardial infarction or cerebrovascular accident, possibly secondary to excessive hypotension in high-risk patients (see WARNINGS, *Hypotension*); cardiac arrest; pulmonary embolism and infarction; rhythm disturbances; atrial fibrillation; palpitation.

Digestive: Ileus, pancreatitis, hepatitis or cholestatic jaundice, melena, anorexia, dyspepsia, constipation, glossitis.

Nervous/Psychiatric: Depression, confusion, ataxia, somnolence, insomnia, nervousness, paresthesia.

Urogenital: Renal failure, oliguria, renal dysfunction (see PRECAUTIONS and DOSAGE AND ADMINISTRATION), prostate hypertrophy.

Respiratory: Bronchospasm, rhinorrhea, asthma, upper respiratory infection.

Skin: Herpes zoster, pruritus, alopecia, flushing, photosensitivity.

Other: Muscle cramps, hyperhidrosis, impotence, blurred vision, taste alteration, tinnitus.

A symptom complex has been reported which may include fever, myalgia, and arthralgia, an elevated erythrocyte sedimentation rate may be present. Rash or other dermatologic manifestations may occur. These symptoms have disappeared after discontinuation of therapy.

Angioedema: Angioedema has been reported in patients receiving VASOTEC (0.2%). Angioedema associated with laryngeal edema may be fatal. If angioedema of the face, extremities, lips, tongue, glottis, and/or larynx occurs, treatment with VASOTEC should be discontinued and appropriate therapy instituted immediately. (See WARNINGS.)

Hypotension: In the hypertensive patients, hypotension occurred in 0.9% and syncope occurred in 0.5% of patients following the initial dose or during extended therapy. Hypotension or syncope was a cause for discontinuation of therapy in 0.1% of hypertensive patients. In heart failure patients, hypotension occurred in 6.7% and syncope occurred in 2.2% of patients. Hypotension or syncope was a cause for discontinuation of therapy in 1.9% of patients with heart failure. (See WARNINGS.)

Clinical Laboratory Test Findings:

Serum Electrolytes: Hyperkalemia (see PRECAUTIONS), hyponatremia.

Creatinine, Blood Urea Nitrogen: In controlled clinical trials, minor increases in blood urea nitrogen and serum creatinine, reversible upon discontinuation of therapy, were observed in about 0.2% of patients with essential hypertension treated with VASOTEC alone. Increases are more likely to occur in patients receiving concomitant diuretics or in patients with renal artery stenosis. (See PRECAUTIONS.) In patients with heart failure who were also receiving diuretics with or without digitalis, increases in blood urea nitrogen or serum creatinine, usually reversible upon discontinuation of VASOTEC and/or other concomitant diuretic therapy, were observed in about 11% of patients. Increases in blood urea nitrogen or creatinine were a cause for discontinuation in 1.2% of patients.

Hemoglobin and Hematocrit: Small decreases in hemoglobin and hematocrit (mean decreases of approximately 0.3 g % and 1.0 vol %, respectively) occur frequently in either hypertension or heart failure patients treated with VASOTEC but are rarely of clinical importance unless another cause of anemia coexists. In clinical trials, less than 0.1% of patients discontinued therapy due to anemia.

Other (Causal Relationship Unknown): In marketing experience, rare cases of neutropenia, thrombocytopenia, and bone marrow depression have been reported.

Liver Function Tests: Elevations of liver enzymes and/or serum bilirubin have occurred.

Dosage and Administration: *Hypertension:* In patients who are currently being treated with a diuretic, symptomatic hypotension occasionally may occur following the initial dose of VASOTEC. The diuretic should, if possible, be discontinued for two to three days before beginning therapy with VASOTEC to reduce the likelihood of hypotension. (See WARNINGS.) If the patient's blood pressure is not controlled with VASOTEC alone, diuretic therapy may be resumed.

If the diuretic cannot be discontinued, an initial dose of 2.5 mg should be used under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and PRECAUTIONS, *Drug Interactions.*)

The recommended initial dose in patients not on diuretics is 5 mg once a day. Dosage should be adjusted according to blood pressure response. The usual dosage range is 10 to 40 mg per day administered in a single dose or in two divided doses. In some patients treated once daily, the antihypertensive effect may diminish toward the end of the dosing interval. In such patients, an increase in dosage or twice-daily administration should be considered. If blood pressure is not controlled with VASOTEC alone, a diuretic may be added.

Concomitant administration of VASOTEC with potassium supplements, potassium salt substitutes, or potassium-sparing diuretics may lead to increases of serum potassium (see PRECAUTIONS).

Dosage Adjustment in Hypertensive Patients with Renal Impairment: The usual dose of enalapril is recommended for patients with a creatinine clearance >30 mL/min (serum creatinine of up to approximately 3 mg/dL). For patients with creatinine clearance ≤30 mL/min (serum creatinine ≥3 mg/dL), the first dose is 2.5 mg once daily. The dosage may be titrated upward until blood pressure is controlled or to a maximum of 40 mg daily.

Heart Failure: VASOTEC is indicated as adjunctive therapy with diuretics and digitalis. The recommended starting dose is 2.5 mg once or twice daily. After the initial dose of VASOTEC, the patient should be observed under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and PRECAUTIONS, *Drug Interactions.*) If possible, the dose of the diuretic should be reduced, which may diminish the likelihood of hypotension. The appearance of hypotension after the initial dose of VASOTEC does not preclude subsequent careful dose titration with the drug, following effective management of the hypotension. The usual therapeutic dosing range for the treatment of heart failure is 5 to 20 mg daily given in two divided doses. The maximum daily dose is 40 mg. Once-daily dosing has been effective in a controlled study, but nearly all patients in this study were given 40 mg, the maximum recommended daily dose, and there has been much more experience with twice-daily dosing. In addition, in a placebo-controlled study which demonstrated reduced mortality in patients with severe heart failure (NYHA Class IV), patients were treated with 2.5 to 40 mg per day of VASOTEC, almost always administered in two divided doses. (See CLINICAL PHARMACOLOGY, *Pharmacodynamics and Clinical Effects.*) Dosage may be adjusted depending upon clinical or hemodynamic response. (See WARNINGS.)

Dosage Adjustment in Heart Failure Patients with Renal Impairment or Hyponatremia: In heart failure patients with hyponatremia (serum sodium <130 mEq/L) or with serum creatinine >1.6 mg/dL, therapy should be initiated at 2.5 mg daily under close medical supervision. (See DOSAGE AND ADMINISTRATION, *Heart Failure,* WARNINGS, and PRECAUTIONS, *Drug Interactions.*) The dose may be increased to 2.5 mg b.i.d., then 5 mg b.i.d. and higher as needed, usually at intervals of four days or more, if at the time of dosage adjustment there is not excessive hypotension or significant deterioration of renal function. The maximum daily dose is 40 mg.

For more detailed information, consult your MSD representative or see Prescribing Information. Merck Sharp & Dohme, Division of Merck & Co., Inc., West Point, PA 19486. J6VS18R(815)

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CARDIZEM® SR
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CONTRAINDICATIONS

CARDIZEM is contraindicated in (1) patients with sick sinus syndrome except in the presence of a functioning ventricular pacemaker, (2) patients with second- or third-degree AV block except in the presence of a functioning ventricular pacemaker, (3) patients with hypotension (less than 90 mm Hg systolic), (4) patients who have demonstrated hypersensitivity to the drug, and (5) patients with acute myocardial infarction and pulmonary congestion documented by x-ray on admission.

WARNINGS

1. **Cardiac Conduction**. CARDIZEM prolongs AV node refractory periods without significantly prolonging sinus node recovery time, except in patients with sick sinus syndrome. This effect may rarely result in abnormally slow heart rates (particularly in patients with sick sinus syndrome) or second- or third-degree AV block (nine of 2,111 patients or 0.43%). Concomitant use of diltiazem with beta-blockers or digitalis may result in additive effects on cardiac conduction. A patient with Prinzmetal's angina developed periods of asystole (2 to 5 seconds) after a single dose of 60 mg of diltiazem.
2. **Congestive Heart Failure**. Although diltiazem has a negative inotropic effect in isolated animal tissue preparations, hemodynamic studies in humans with normal ventricular function have not shown a reduction in cardiac index nor consistent negative effects on contractility (dp/dt). An acute study of oral diltiazem in patients with impaired ventricular function (ejection fraction 24% ± 6%) showed improvement in indices of ventricular function without significant decrease in contractile function (dp/dt). Experience with the use of CARDIZEM (diltiazem hydrochloride) in combination with beta-blockers in patients with impaired ventricular function is limited. Caution should be exercised when using this combination.
3. **Hypotension**. Decreases in blood pressure associated with CARDIZEM therapy may occasionally result in symptomatic hypotension.
4. **Acute Hepatic Injury**. Mild elevations of transaminases with and without concomitant elevation in alkaline phosphatase and bilirubin have been observed in clinical studies. Such elevations were usually transient and frequently resolved even with continued diltiazem treatment. In rare instances, significant elevations in enzymes such as alkaline phosphatase, LDH, SGOT, SGPT, and other phenomena consistent with acute hepatic injury have been noted. These reactions tended to occur early after therapy initiation (1 to 8 weeks) and have been reversible upon discontinuation of drug therapy. The relationship to CARDIZEM is uncertain in some cases, but probable in some. (See PRECAUTIONS.)

PRECAUTIONS

General. CARDIZEM (diltiazem hydrochloride) is extensively metabolized by the liver and excreted by the kidneys and in bile. As with any drug given over prolonged periods, laboratory parameters should be monitored at regular intervals. The drug should be used with caution in patients with impaired renal or hepatic function. In subacute and chronic dog and rat studies designed to produce toxicity, high doses of diltiazem were associated with hepatic damage. In special subacute hepatic studies, oral doses of 125 mg/kg and higher in rats were associated with histological changes in the liver which were reversible when the drug was discontinued. In dogs, doses of 20 mg/kg were also associated with hepatic changes; however, these changes were reversible with continued dosing.

Dermatological events (see ADVERSE REACTIONS section) may be transient and may disappear despite continued use of CARDIZEM. However, skin eruptions progressing to erythema multiforme and/or exfoliative dermatitis have also been infrequently reported. Should a dermatologic reaction persist, the drug should be discontinued.

Drug Interaction. Due to the potential for additive effects, caution and careful titration are warranted in patients receiving CARDIZEM concomitantly with any agents known to affect cardiac contractility and/or conduction. (See WARNINGS.) Pharmacologic studies indicate that there may be additive effects in prolonging AV conduction when using beta-blockers or digitalis concomitantly with CARDIZEM. (See WARNINGS.)

As with all drugs, care should be exercised when treating patients with multiple medications. CARDIZEM undergoes biotransformation by cytochrome P-450 mixed function oxidase. Coadministration of CARDIZEM with other agents which follow the same route of biotransformation may result in the competitive inhibition of metabolism. Dosages of similarly metabolized drugs, particularly those of low therapeutic ratio or in patients with renal and/or hepatic impairment, may require adjustment when starting or stopping concomitantly administered CARDIZEM to maintain optimum therapeutic blood levels.

Beta-blockers: Controlled and uncontrolled domestic studies suggest that concomitant use of CARDIZEM and beta-blockers or digitalis is usually well tolerated, but available data are not sufficient to predict the effects of concomitant treatment in patients with left ventricular dysfunction or cardiac conduction abnormalities.

Administration of CARDIZEM (diltiazem hydrochloride) concomitantly with propranolol in five normal volunteers resulted in increased propranolol levels in all subjects and bioavailability of propranolol was increased approximately 50%. If combination therapy is initiated or withdrawn in conjunction with propranolol, an adjustment in the propranolol dose may be warranted. (See WARNINGS.)

Cimetidine: A study in six healthy volunteers has shown a significant increase in peak diltiazem plasma levels (58%) and area-under-the-curve (53%) after a 1-week course of cimetidine at 1,200 mg per day and diltiazem 60 mg per day. Ranitidine produced smaller, nonsignificant increases. The effect may be mediated by cimetidine's known inhibition of hepatic cytochrome P-450, the enzyme system probably responsible for the first-pass metabolism of diltiazem. Patients currently receiving diltiazem therapy should be carefully monitored for a change in pharmacological effect when initiating and discontinuing therapy with cimetidine. An adjustment in the diltiazem dose may be warranted.

Digitalis: Administration of CARDIZEM with digoxin in 24 healthy male subjects increased plasma digoxin concentrations approximately 20%. Another investigator found no increase in digoxin levels in 12 patients with coronary artery disease. Since there have been conflicting results regarding the effect of digoxin levels, it is recommended that digoxin levels be monitored when initiating, adjusting, and discontinuing CARDIZEM therapy to avoid possible over- or under-digitalization. (See WARNINGS.)

Anesthetics: The depression of cardiac contractility, conductivity, and automaticity as well as the vascular dilation associated with anesthetics may be potentiated by calcium channel blockers. When used concomitantly, anesthetics and calcium blockers should be titrated carefully.

Carcinogenesis, Mutagenesis, Impairment of Fertility. A 24-month study in rats and a 21-month study in mice showed no evidence of carcinogenicity. There was also no mutagenic response in in vitro bacterial tests. No intrinsic effect on fertility was observed in rats.

Pregnancy. Category C. Reproduction studies have been conducted in mice, rats, and rabbits. Administration of doses ranging from five to ten times greater (on a mg/kg basis) than the daily recommended therapeutic dose has resulted in embryo and fetal lethality. These doses, in some studies, have been reported to cause skeletal abnormalities. In the perinatal/postnatal studies, there was some reduction in early individual pup weights and survival rates. There was an increased incidence of stillbirths at doses of 20 times the human dose or greater.

There are no well-controlled studies in pregnant women; therefore, use CARDIZEM in pregnant women only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers. Diltiazem is excreted in human milk. One report suggests that concentrations in breast milk may approximate serum levels. If use of CARDIZEM is deemed essential, an alternative method of infant feeding should be instituted.

Pediatric Use. Safety and effectiveness in children have not been established.

ADVERSE REACTIONS

Serious adverse reactions have been rare in studies carried out to date, but it should be recognized that patients with impaired ventricular function and cardiac conduction abnormalities have usually been excluded from these studies.

The adverse events described below represent events observed in clinical studies of hypertensive patients receiving either CARDIZEM Tablets or CARDIZEM SR Capsules as well as experiences observed in studies of angina and during marketing. The most common events in hypertension studies are shown in a table with rates in placebo patients shown for comparison. Less common events are listed by body system; these include any adverse reactions seen in angina studies that were not observed in hypertension studies. In all hypertensive patients studied (over 900), the most common adverse events were edema (9%), headache (8%), dizziness (6%), asthenia (5%), sinus bradycardia (3%), flushing (3%), and 1° AV block (3%). Only edema and perhaps bradycardia and dizziness were dose related. The most common events observed in clinical studies (over 2,100 patients) of angina patients and hypertensive patients receiving CARDIZEM Tablets or CARDIZEM SR Capsules were (ie, greater than 1%) edema (5.4%), headache (4.5%), dizziness (3.4%), asthenia (2.8%), first-degree AV block (1.8%), flushing (1.7%), nausea (1.6%), bradycardia (1.5%), and rash (1.5%).

DOUBLE BLIND PLACEBO CONTROLLED HYPERTENSION TRIALS

Adverse	Diltiazem N=315 # pts (%)	Place N=2 # pts (
headache	38 (12%)	17 (8%
AV block first degree	24 (7.6%)	4 (1.9
dizziness	22 (7%)	6 (2.8
edema	19 (6%)	2 (0.9
bradycardia	19 (6%)	3 (1.4
ECG abnormality	13 (4.1%)	3 (1.4
asthenia	10 (3.2%)	1 (0.5
constipation	5 (1.6%)	2 (0.9
dyspepsia	4 (1.3%)	1 (0.5
nausea	4 (1.3%)	2 (0.9
palpitations	4 (1.3%)	2 (0.9
polyuria	4 (1.3%)	2 (0.9
somnolence	4 (1.3%)	—
alk phos increase	3 (1%)	1 (0.5
hypotension	3 (1%)	1 (0.5
insomnia	3 (1%)	1 (0.5
rash	3 (1%)	1 (0.5
AV block second degree	2 (0.6%)	—

In addition, the following events were reported infrequently (less th have been observed in angina trials. In many cases, the relation t uncertain.

Cardiovascular: Angina, arrhythmia, bundle branch block, tachycar tricular extrasystoles, congestive heart failure, sync
Nervous System: Amnesia, depression, gait abnormality, hallucinati vousness, paresthesia, personality change, tinnitu abnormal dreams.
Gastrointestinal: Anorexia, diarrhea, dysgeusia, mild elevations of SG and LDH (see hepatic warnings), vomiting, weight thirst.
Dermatological: Petechiae, pruritus, photosensitivity, urticaria.
Other: Amblyopia, CPK increase, dyspnea, epistaxis, eye hyperglycemia, sexual difficulties, nasal congestion, osteoarticular pain, impotence, dry mouth.

The following postmarketing events have been reported infrequen tients receiving CARDIZEM: alopecia, gingival hyperplasia, erythema m and leukopenia. Definitive cause and effect relationship between the and CARDIZEM therapy cannot yet be established.

Iss

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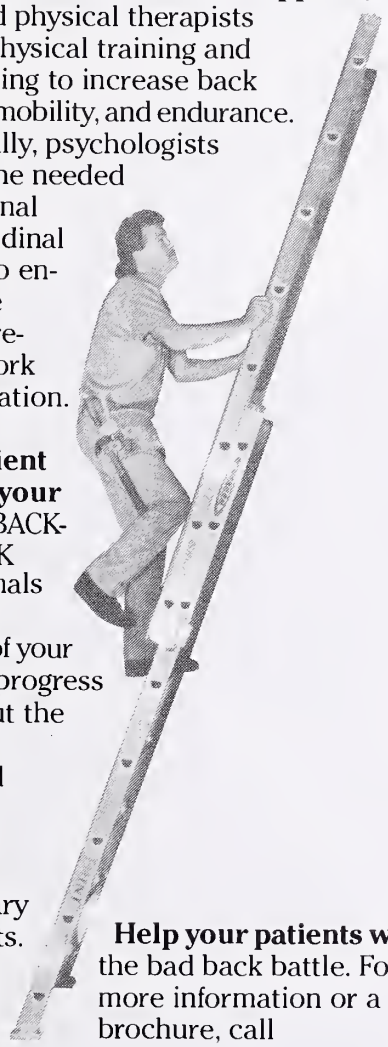

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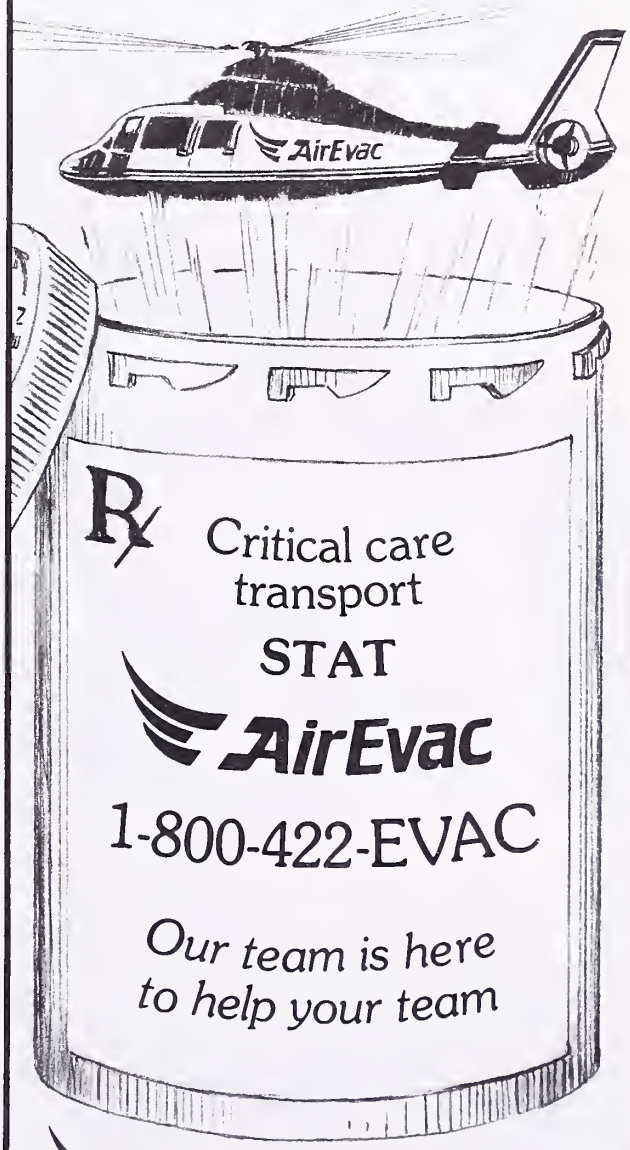

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Please see brief summary of prescribing information, and reference on adjacent page.

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BRIEF SUMMARY

CONTRAINDICATIONS
There are no known contraindications to the use of sucralfate.

PRECAUTIONS
Duodenal ulcer is a chronic, recurrent disease. While short-term treatment with sucralfate can result in complete healing of the ulcer, a successful course of treatment with sucralfate should not be expected to alter the post-healing frequency or severity of duodenal ulceration.

Drug Interactions: Animal studies have shown that simultaneous administration of CARAFATE (sucralfate) with tetracycline, phenytoin, digoxin, or cimetidine will result in a statistically significant reduction in the bioavailability of these agents. The bioavailability of these agents may be restored simply by separating the administration of these agents from that of CARAFATE by two hours. This interaction appears to be nonsystemic in origin, presumably resulting from these agents being bound by CARAFATE in the gastrointestinal tract. The clinical significance of these animal studies is yet to be defined. However, because of the potential of CARAFATE to alter the absorption of some drugs from the gastrointestinal tract, the separate administration of CARAFATE from that of other agents should be considered when alterations in bioavailability are felt to be critical for concomitantly administered drugs.

Carcinogenesis, Mutagenesis, Impairment of Fertility: Chronic oral toxicity studies of 24 months' duration were conducted in mice and rats at doses up to 1 gm/kg (12 times the human dose). There was no evidence of drug-related tumorigenicity. A reproduction study in rats at doses up to 38 times the human dose did not reveal any indication of fertility impairment. Mutagenicity studies were not conducted.

Pregnancy: Teratogenic effects. Pregnancy Category B. Teratogenicity studies have been performed in mice, rats, and rabbits at doses up to 50 times the human dose and have revealed no evidence of harm to the fetus due to sucralfate. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when sucralfate is administered to a nursing woman.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS
Adverse reactions to sucralfate in clinical trials were minor and only rarely led to discontinuation of the drug. In studies involving over 2,500 patients treated with sucralfate, adverse effects were reported in 121 (4.7%).

Constipation was the most frequent complaint (2.2%). Other adverse effects, reported in no more than one of every 350 patients, were diarrhea, nausea, gastric discomfort, indigestion, dry mouth, rash, pruritus, back pain, dizziness, sleepiness, and vertigo.

OVERDOSAGE
There is no experience in humans with overdosage. Acute oral toxicity studies in animals, however, using doses up to 12 gm/kg body weight, could not find a lethal dose. Risks associated with overdosage should, therefore, be minimal.

DOSAGE AND ADMINISTRATION
The recommended adult oral dosage for duodenal ulcer is 1 gm four times a day on an empty stomach.

Antacids may be prescribed as needed for relief of pain but should not be taken within one-half hour before or after sucralfate.

While healing with sucralfate may occur during the first week or two, treatment should be continued for 4 to 8 weeks unless healing has been demonstrated by x-ray or endoscopic examination.

HOW SUPPLIED
CARAFATE (sucralfate) 1-gm tablets are supplied in bottles of 100 (NDC 0088-1712-47) and in Unit Dose Identification Paks of 100 (NDC 0088-1712-49). Light pink scored oblong tablets are embossed with CARAFATE on one side and 1712 bracketed by C's on the other. Issued 1/87

Reference:
1 Eliakim R, Ophir M, Rachmilewitz D: *J Clin Gastroenterol* 1987;9(4):395-399

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Action: Yohimbine blocks presynaptic alpha-2 adrenergic receptors. Its action on peripheral blood vessels resembles that of reserpine, though it is weaker and of short duration. Yohimbine's peripheral autonomic nervous system effect is to increase parasympathetic (cholinergic) and decrease sympathetic (adrenergic) activity. It is to be noted that in male sexual performance, erection is linked to cholinergic activity and to alpha-2 adrenergic blockade which may theoretically result in increased penile inflow, decreased penile outflow or both.

Yohimbine exerts a stimulating action on the mood and may increase anxiety. Such actions have not been adequately studied or related to dosage although they appear to require high doses of the drug. Yohimbine has a mild anti-diuretic action, probably via stimulation of hypothalmic centers and release of posterior pituitary hormone.

Reportedly, Yohimbine exerts no significant influence on cardiac stimulation and other effects mediated by B-adrenergic receptors, its effect on blood pressure, if any, would be to lower it; however no adequate studies are at hand to quantitate this effect in terms of Yohimbine dosage.

Indications: Yocon® is indicated as a sympathicolytic and mydriatric. It may have activity as an aphrodisiac.

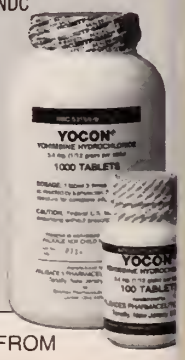
Contraindications: Renal diseases, and patient's sensitive to the drug. In view of the limited and inadequate information at hand, no precise tabulation can be offered of additional contraindications.

Warning: Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

Adverse Reactions: Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral a-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.[1,2] Also dizziness, headache, skin flushing reported when used orally.[1,3]

Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.[1,3,4] 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to ½ tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.[3]

How Supplied: Oral tablets of Yocon® 1/12 gr. 5.4 mg in bottles of 100's NDC 53159-001-01 and 1000's NDC 53159-001-10.



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Created Equal

The ability to discriminate is a uniquely human faculty that permits mankind to choose among qualities. Depending on motive, discrimination has led to both the best and the worst of human actions. Human discrimination produced apartheid in Africa and the Holocaust in Europe, but it has also produced Handel's *Messiah* and the marvel of modern medical care.

The superb medical care of today is more costly than yesterday's simpler remedies, and so a discriminative cost-shifting device has appeared. Known in the insurance trade as a Preferred Provider Organization (PPO), it "prefers" physicians whose site of service, procedures, and fees are set before patient contact is made. The physician, in return for the loss of autonomy, is provided a stream of patients on whom he does not have to merit referral. Human discrimination permits the PPO to select physicians on financial qualifications rather than medical qualifications.

Most PPO patients are entrapped in an employer-provider health insurance contract and must relinquish their choice of treatment and their regular physician to avoid added out-of-pocket expense. Thus, medical quality decisions are finessed and money is shifted from physicians' reimbursement into the coffers of the marketing organization. The PPO patient's freedom of choice of physicians and site of service is sacrificed to cut costs for the employer.

Physician caution and patient misgivings about medical quality have inhibited PPO acceptance, but the ever-increasing price of modern health care has stimulated companies and government agencies to experiment. Unfortunately, cutting costs through the PPO process inevitably reduces the patient's freedom and the physician's scientific autonomy.

The PPO mechanism institutionalizes a perfidious discrimination when a government entity is the sponsor of the PPO. Then the government agency "prefers" one group of citizens for valuable opportunities, and rejects another citizen group with equal merit and qualifications. The resulting disequilibrium destroys the scientific foundation of the meritocracy of modern health care, and sets physician against physician in a fight over fees. When the lust for money replaces patient health as the lodestar of the medical system, we physicians become like vultures at a carcass.

It will never be morally just or ethically correct to use money collected under state tax law coercion to enrich a special group of physicians selected by a political entity. Turmoil and trouble will follow. Medical merit will diminish. Truly ethical physicians will shun such a system.

A PPO sponsored by a state agency is an immoral use of the state legislative power that results in physician apartheid and diminished freedom for the patient-citizen. Surely Oklahoma can devise an ethical and just medical insurance plan for the state employees!

Ray V. McIntyre, M.D.

Stand Pat!

I approach this coming year with some degree of trepidation. Certainly it is an honor to serve as president of our state association, but with that honor come a great deal of challenge and responsibility. To follow in the footsteps of our previous leadership is compelling and inspirational. We have been most fortunate to have had such good leaders and staff in Oklahoma, and I can only hope to carry the ball without too much fumbling over the next year.

It seems that every period is an important time in our profession's life, but we are now faced with so many changes affecting medicine in the United States that personal involvement becomes critical. I can't think of a more important time for us to become united and speak with a united and clear voice. The outside forces that are actively altering the economics and methodology of our profession are finding the going much easier as our members either choose not to participate or split into separate groups, attempting to bargain in their own behalf at the potential expense of the entire profession.

One of the major reasons for accepting this position was to attempt to encourage more participation and improve on the unity of our state association. It is critical that all of us spend more time now attempting to at least guide the changes that are "coming down the pike."

The state and national organization represent the most effective avenue to accomplish this, but all of us must devote some time and thought to these activities. It appears at this time that some either do not recognize what is occurring or are trying to get in as much work and financial return as they can before the "big change comes." We need to have more influence and input into the decision making, and this is done only by taking action through an organized and united group that represents the profession as a whole.

Just as with basketball, football, etc, we will be more effective in our actions if we function as a team. When we split into multiple individual factions, we become less effective, and although we may make some impressive scores from time to time, we will most certainly lose the "big game."

Therefore our effort the next year will be aimed at "standing pat" with participation, action, and teamwork. We have already encouraged increased participation by our changes in the elective process for our AMA delegation and will attempt to restructure our councils in order to stimulate more united action on their part. Teamwork will be stressed by attempting to draw together our splinter groups and improve communication and participation with our county organizations. It is past time for all of you, as leaders, to encourage your colleagues to "stand pat" before the game is lost.

An Outbreak of Gastrointestinal Illness Caused by *Staphylococcus aureus* in a Prison Population

Pamela Wall Archer, BS; Harald Heijbel, MD; Gregory R. Istre, MD

Overcrowded conditions in a closed setting may contribute to the occurrence of disease outbreaks among the population.

In 1982, 656 food-borne outbreaks were reported to the Centers for Disease Control, with the etiologic pathogen recognized in 34% of the outbreaks.[1] *Staphylococcus aureus* accounted for 13% of those outbreaks with known etiology.

Prompt reporting of suspected outbreaks by medical personnel is of utmost importance to enable public health officials to respond to these situations. Investigation initiated in a timely manner allows determination of causative factors and makes possible the prevention and control of further cases through education and removal of contaminated products.[2,3] The outbreak described in this study occurred in a prison. The confined population facilitated recognition and investigation of the outbreak.

Background

Prison A is a medium security institution operated by the Oklahoma Department of Corrections. It was opened in December of 1977 and designed to house 400 inmates. At the time of the outbreak, the institution had a total inmate population of 953 and a staff of approximately 150. It had 7 units including 2 maximum security units, 4 medium security units, and 1 minimum security unit. Ages of inmates ranged from 16 to 80 years.

Food was prepared in one kitchen operated by 9 employees and 60 inmates. Meals were delivered to Units 1, 2, and 7; inmates in the remaining 4 units ate their meals in the facility's dining hall. For inmates who had canteen privileges, purchase of snacks was allowed each Thursday. According to the infirmary staff, no other outbreaks of gastrointestinal illness had occurred during the six years that Prison A had been operating.

On Sunday evening, August 5, 1984, a physician's assistant in the Prison A infirmary called the Epidemiology Service of the Oklahoma State Department of Health. The assistant reported that approximately 50 inmates with gastrointestinal symptoms, including vomiting and watery diarrhea, had been treated since 4 PM that day. Staff of the Epidemiology Service joined prison staff in investigating the outbreak.

Methods

Epidemiologic. Initial in-depth interviews were conducted with six ill inmates to determine the clinical manifestations of the illness and exposures in common. These interviews revealed that most ill inmates had eaten breakfast, lunch, and dinner in the prison's cafeteria on August 5. A self-administered questionnaire, designed to obtain specific food consumption histories from August 5 and gastrointestinal symptoms, was developed and distributed to inmates in 4 of the units and to all employees who

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Table 1. Attack Rates for Illness, by Meal Consumed, Prison A, August 1984

Meal	Persons Who Ate Meal		Persons Who Did Not Eat Meal		Rate Ratio	95% CI†	P Value
	Ill/Total	Attack Rate (%)	Ill Total	Attack Rate (%)			
Breakfast	157/236	66.5	81/131	61.8	1.1	0.9-1.3	0.4
Lunch	183/264	69.3	55/103	53.4	1.3	1.1-1.6	0.006
Dinner*	230/325	70.8	8/42	19.0	3.7	2.5-5.5	1×10^{-10}

*Only dinner consumption remained significantly associated with illness after stratified analysis.
†Confidence Interval.

worked on August 5. Because inmates indicated they could not reliably identify the type of meat consumed, the entree was referred to as "beef/pork" on the questionnaire.

Health department personnel performed an inspection of food preparation, storage, and serving areas. Specific details regarding the preparation of food consumed on August 5 were obtained.

A case was defined as a person who had at least one of the following symptoms with onset on August 5 or 6, 1984: vomiting, diarrhea (2 or more loose stools in a 24-hour period), abdominal cramps, or nausea. Chi square was used to test differences in food-specific attack rates. Rate ratios (RR) and 95% confidence intervals were calculated according to the program by Rothman and Boice.[4]

Laboratory. Three specimens of vomitus and one specimen of unknown source (either vomitus or stool) were obtained from ill persons and tested for *Salmonella, Shigella, Campylobacter,* and *S aureus.* Leftover samples of 4 food items (pork, beef, corn, chocolate pudding) served on August 5 were tested for *S aureus* and *Bacillus cereus.* In addition, 17 cultures from nares and skin lesions of 6 food handlers were tested for *S aureus.* All samples were tested at the Oklahoma State Department of Health Laboratory by routine microbiologic techniques.[5] Isolates of *S aureus* were sent to the Staphylococcus Laboratory in the Nosocomial Infections Laboratory Branch at the Centers for Disease Control (CDC) for phage typing. Bacterial isolates from the implicated food and from human specimens were sent to the Center for Microbiological Investigations, Food and Drug Administration, in Minneapolis for toxin testing.

Results

Epidemiologic. Of the 666 questionnaires distributed, 379 (57%) were returned. Twelve of the returned questionnaires were excluded from analysis because interpretation was not possible, inmates refused to fill them in, or persons had transferred to the prison after August 5, leaving 367 respondents.

Two hundred thirty-six (64%) of 367 respondents met the definition of a case. Sixty-four (27%) persons had reported to the prison infirmary; 2 (1%) received intravenous rehydration. None were hospitalized; none died. Symptoms reported by patients included diarrhea (59%), vomiting (42%), abdominal cramps (84%), nausea (61%), and subjective fever (27%). One hundred sixty-eight (71%) patients reported diarrhea and/or vomiting; ages of cases ranged from 16 to 63 years, with a mean of 28 years.

The attack rate of illness by unit varied from 52% to 91%. The attack rate did not correlate with the time or place the inmates of each unit ate the evening meal. Analysis of illness by meal consumed revealed 230 (71%) of 325 who ate dinner developed illness whereas 8 (19%) of 42 who did not eat dinner became ill ($p = 1 \times 10^{-10}$, Table 1). Although initial analysis showed eating the lunch also was associated with illness, a stratified analysis controlling for dinner consumption and comparing persons who ate and did not eat lunch revealed that only the evening meal remained associated with illness (Table 2).

Analysis of illness by consumption of each food item available at the dinner revealed 5 food items that were significantly associated with illness (Table 3). Stratified analysis controlling for beef/pork consumption and comparing persons who ate

Table 2. Attack Rates for Illness by Lunch Consumption, Stratified by Dinner Consumption,* Prison A, August 1984

Dinner Consumption	Lunch Consumption	Ill/Total	% Ill	Rate Ratio
Ate dinner	Ate lunch	179/247	72.5	1.1
	Did not eat lunch	49/74	66.2	
Did not eat dinner	Ate lunch	3/15	20.0	4.0
	Did not eat lunch	1/20	5.0	

*Data unknown for 11 individuals

Table 3. Food-Specific Attack Rates for Illness Among Those Who Ate Dinner, Prison A, August 1984

Food Item	Ill/No. Respondents	Attack Rate (%)	Ill/No. Respondents	Attack Rate (%)	Rate Ratio	95% CI†	P Value
Corn	180/245	73.5	50/80	62.5	1.2	1.0-1.4	0.083
Spinach	111/150	74.0	119/175	68.0	1.1	0.9-1.3	0.29
Chocolate pudding	194/272	71.3	36/53	67.9	1.1	0.9-1.3	0.74
Beef/pork*	221/298	74.2	9/27	33.3	2.2	1.6-3.2	0.00005
Sauce	178/237	75.1	52/88	59.1	1.3	1.1-1.5	0.007
Tea	203/274	74.1	27/51	52.9	1.4	1.1-1.7	0.004
Bread	214/293	73.0	16/32	50.0	1.5	1.1-1.9	0.01

*Only beef/pork remained significantly associated with illness after stratified analysis.
†Confidence Interval

and did not eat each of the other food items revealed that only the beef/pork was significantly associated with illness (RR 2.2, 95%, CI 1.6-3.2, $p = 0.00005$). No dose-response relationship was found. Ninety percent of persons developed illness within 6 hours of eating the implicated meal; the median incubation was 3 hours with a range of less than one hour to 21 hours (Figure 1).

Laboratory. Of the 4 human specimens tested, 2 vomitus and 1 specimen of unknown type (either vomitus or stool) were positive for *S aureus*. The pork was found to have approximately 570,000 *S aureus* organisms per gram. In addition, 3 of 6 food handlers tested from a skin or nasal swab had a positive culture for *S aureus*. Cultures from other leftover food items and from the other 3 food handlers tested were negative. The phage types of the *S aureus* isolates from the specimens from ill inmates, the pork, and the nares of the inmate who had prepared the pork were all 29/52/+. The *S aureus* isolates from the nares and skin swab of the two other food handlers were two different phage types.

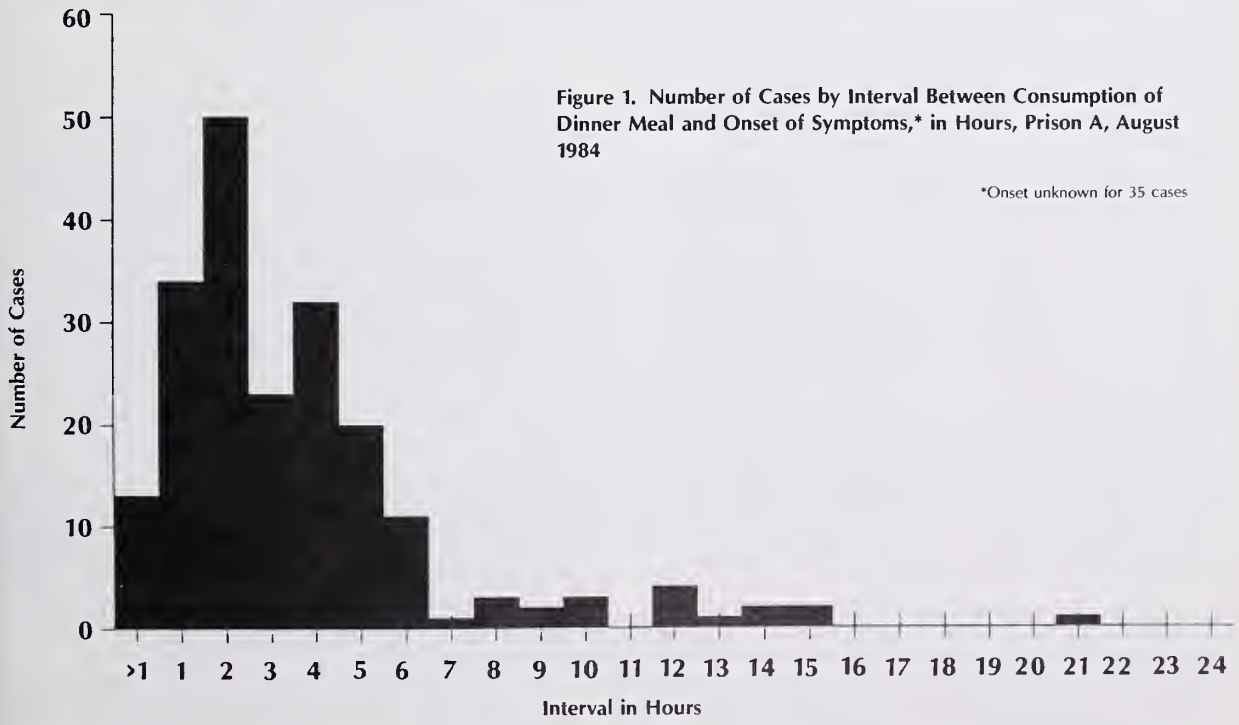

Figure 1. Number of Cases by Interval Between Consumption of Dinner Meal and Onset of Symptoms,* in Hours, Prison A, August 1984

*Onset unknown for 35 cases

Environmental. Prison A received frozen meat every Friday; the meat was stored in a freezer. It could not be determined how long the pork roasts prepared on August 5 had been in storage. Roasts still in the freezer had been stored from 3 days to 18 months. Approximately 500 pounds of pork and 50 pounds of beef were prepared for the evening meal of August 5. All food was prepared in one kitchen area by 30 inmates and 3 employees. Pork roasts were taken from the freezer at 6 PM Saturday and steam cooked from that time until 6 AM Sunday. One inmate (the person whose nares culture grew the epidemic strain of *S aureus*) was reported to have been the only person who handled the pork; he reported that he had worn gloves. Between 6 PM and 10 AM, the pork was sliced and put through a grinder. Pans were filled with pork, stacked on top of one another, and left at room temperature until they were served beginning at 4 PM. The pork was not reheated before it was served.

Discussion

Epidemiologic, laboratory, and environmental evidence linked this outbreak of gastrointestinal symptoms to the pork served at the dinner meal on August 5, 1984. Analysis of questionnaire data revealed that persons who ate the dinner meal were at significantly greater risk of becoming ill than those who did not; meat was the specific food item implicated. Clinical manifestations and the short incubation period were compatible with *S aureus* toxin ingestion.[6] Laboratory results supported the clinical and epidemiologic findings implicating *S aureus* as the agent responsible for the outbreak. The same phage type of *S aureus* was found in specimens from ill persons, the pork, and from the nares of the person who prepared the pork. Investigation into the preparation of the pork revealed it was held at room temperature for approximately 10 hours, allowing ample time for growth of *S aureus* and production of toxin.[7]

The kitchen was designed to prepare food for a prison population of 400. In order to provide meals for 953 inmates, it was necessary to start preparing dinner the night before it was served. This procedure clearly played a role in the occurrence of the outbreak.

Undoubtedly, many outbreaks similar to the one described occur but do not come to the attention of health authorities.[1,3] Consumers or physicians may not report suspected food-borne illness or, more likely, the illness is not recognized as having a common food source. Although such an occurrence is easily recognized in a closed setting, unless persons eating together have contact with one another after the onset of symptoms, clusters of illness are not likely to be recognized or reported.

This outbreak emphasizes the potential for high attack rates of illness due to contaminated food items and the need for holding food items at proper temperatures to prevent growth of disease-causing bacteria. Recognition and investigation of outbreaks such as this one allow identification and correction of inadequate food handling practices; this helps to prevent future outbreaks.

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Incidence of Antibodies to *Mycoplasma pneumoniae* at a Veterans Administration Medical Center

David T. Reiber and D.J. Flournoy, PhD

Mycoplasma pneumoniae *indirect immunofluorescent antibody titers were determined on the sera of 104 patients. Four patients (3.9%) had titers of 1:128+, suggesting active or recent* M pneumoniae *infections. A retrospective review of complement fixation* M pneumoniae *and Cold Agglutinin test results, along with the current data, suggests that 0.4% to 5.7% of our patients have recent or active* M pneumoniae *infections.*

Mycoplasma pneumoniae is a tiny cell-wall-deficient bacterium that is one of the major causes of "primary atypical pneumonia." Pneumonia develops in about 10% of adult patients infected with *M pneumoniae,*[1] and varies from inapparent or mild to severe.[2] *M pneumoniae* may be responsible for 5% to 20% of all pneumonias,[3] and up to 50% of all community-acquired pneumonias during noninfluenza periods.[4] Other organisms that should be included in the diagnostic workup for "primary atypical pneumonia" include *Coxiella burnetti* and *Chlamydia trachomatis*. Also, in the past, many patients who were diagnosed as having "atypical pneumonia" and who responded to erythromycin therapy, were infected with *Legionella pneumophila*. Treatment of *M pneumoniae*–infected patients with tetracycline or erythromycin accelerates resolution of clinical and radiographic abnormalities.

Although infection with this organism most often occurs in school-aged children, people of any age can be affected.[3] Antibodies to *M pneumoniae* have been shown to occur in as high as 95% of the general population, indicating widespread exposure to the organism.[5,6] Immunity is short lived. In addition, the presence of a detectable titer in a person does not necessarily correlate with immunity, since reinfections are common in people with circulating antibody.[5] In general, immunoglubulin M (IgM) antibody titers exceed those of IgG in children, while IgG antibody titers are more prevalent than IgM in adults. Also, many believe that IgG makes up the preponderance of adult antibody, due to reinfection.[7,8]

Pneumonia is a leading immediate cause of death in patients at the Veterans Administration Medical Center (VAMC) in Oklahoma City.[9] Since we receive relatively few requests for *Mycoplasma pneumoniae* cultures or serological studies, it is possible that some of our patients with *M pneumoniae* pneumonia go undiagnosed or are incorrectly diagnosed. This could result in increased morbidity and lengthen the hospital stay of those patients. The present study was therefore undertaken to approximate the incidence of *M pneumoniae* infections in a select group of our patients.

Materials and Methods

One hundred and four serum specimens were obtained from patients who had routine sputum bacterial cultures (not including those for *Mycobacterium* sp) performed between January 20 and March 24, 1988. None of the sera were paired specimens (ie,

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they were all single titer specimens). Sera were stored at 4°C for one to six weeks prior to batch testing. The *Mycoplasma pneumoniae* Antibody (MP) Test System for immunoglobulin G (IgG), kit number 17001C, was used for testing. The indirect immunofluorescence antibody (IFA) kits were manufactured by Zeus Technologies, Inc., Raritan, NJ, and donated by DS Nelson, Wampole Laboratories (distributor). Testing was performed according to the manufacturer's directions.

Slides were examined using an American Optical Model 2071 fluorescent microscope with tungsten halogen incidence light. Positive and negative control sera were tested with each batch run, and gave appropriate results each time tested. A retrospective analysis of in-house Cold Agglutination (CA) and *M pneumoniae* complement fixation (CF) reference laboratory (Special Serology Reference Laboratory, Lexington, Ky) results was also performed. The CA data were originally collected by Donna Downard of the VAMC Microbiology Section. IFA results were subjected to an analysis of variance (ANOVA) to test for significance of patient age versus IFA titer. The following single titers were considered to conservatively represent recent or active infections: IFA (1:128 or greater), CA (1:128 or greater), and CF (1:256 or greater).

Results

One hundred and four sera were collected over a two-month period. All specimens were from male patients with an age range from 32 to 92 years (mean 63.7). Four of the 104 samples (3.9%) showed a titer 1:128 or greater (Table 1).

Age of the patient was analyzed against the IFA result (Table 2) and shows a trend toward higher titers in lower age groups. Ages of patients with titers of 1:64 and 1:128 were found to be significantly different from the ages of patients with lower titers when subjected to ANOVA at levels of 0.05 and 0.025.

Table 1. Indirect Immunofluorescence Antibody Test Results

No. of Patients (%)	Endpoint Dilution	FI	Interpretation
33 (31.7)	Negative at 1:32	—	No detectable antibody
48 (46.1)	Speckled at 1:32	<1+	No significance
13 (12.5)	Uniform at 1:32	1+	Previous infection
6 (5.8)	Uniform at 1:64	1+	Previous infection
4 (3.9)	Uniform at 1:128+	1+	Active/recent infection

Speckled and *uniform* refer to the type of fluorescence observed on the antigen-coated wire loops. No (number), FI (fluorescence intensity at the endpoint dilution).

Table 2. Age Versus Indirect Immunofluorescence Antibody Test Result

Patient Age Ranges	Number of Patients with a Result of: Negative	Speckled	1:32	1:64	1:128+
30-39	0	1	0	0	1
40-49	1	3	1	3	1
50-59	8	8	2	0	0
60-69	13	25	7	3	2
70-79	9	8	2	0	0
80-89	1	3	1	0	0
90-99	1	0	0	0	0

The average age for various results was: negative (65.6 years old), speckled (64.0), 1:32 (65.7), 1:64 (54.0), and 1:128+ (52.0)

Retrospective analyses were also done on *M pneumoniae* CF (sent to the Special Serology Reference Laboratory in Lexington, Ky) and CA (done in our serology laboratory) tests. The following results were obtained from 256 CF reference tests, which were performed from 1980 to 1987: 1:4 (37.9%), 1:8 (16.8%), 1:16 (23.8%), 1:32 (15.2%), 1:64 (5.5%), 1:128 (0.4%), and 1:256 (0.4%). A review of 120 CA test results (May 6, 1983, to April 24, 1985) from our serology laboratory found the following titers: negative (82.5%), 1:4 (0.8%), 1:32 (4.2%), 1:64 (6.7%), 1:128 (3.3%), 1:256 (0.8%), 1:512 (0.8%), and 1:4096 (0.8%). A single titer of 1:128 or greater was found in 5.7% of these results. Paired sera results were available on very few patients.

Sputum culture results and sputum quality (ie, saliva versus sputum) were evaluated as a possible means of determining when *M pneumoniae* studies should be ordered. When results from only "good" sputa (ie, sputum with less than 10 squamous epithelial cells/low dry objective field) were evaluated, the proportion of patients with no pathogen identified was: negative antibody titer (52%), 1:32 (33%), 1:64 (40%), and 1:128 (75%). We consider these results to be inconclusive.

Discussion

Sera were collected only from patients who also had routine sputum cultures performed, in an attempt to include only patients showing signs of respiratory illness. This collection requirement should also have aided us in eliminating the serological cross reactions between *M pneumoniae* and *M genitalium*, which have been described by Lind.[10] These cross

reactions have been shown with *M genitalium* for the CF and IFA tests. It is not impossible, however, that some of our test group had at some time been exposed to *M genitalium*.

Confirmation of an active infection requires testing of paired serum specimens, collected at intervals of at least one week, to demonstrate seroconversion.[7] In our study, we were unable to differentiate between active and recent infection, because only single serum specimens were available. A comparison of IgM and IgG titers can also be used as a means of differentiating active from recent infection,[5] although only IgG-specific test kits were available to us. IgG antibody determinations are, however, the most appropriate for testing in adults. IgM antibody levels are more often elevated in younger patients and IgG antibodies in adult patients infected with *M pneumoniae*.[7,8] This variation in antibody response is generally thought to be due to reinfection in the adult population.

Our IFA results and the CA test results showed similar percentages of active or recent infection in their respective test groups (ie, 3.9% for IFA, 5.7% for CA). The CA Test is, however, probably the worst test used for detection of *M pneumoniae* infection. It is nonspecific and insensitive; 50% of patients with pulmonary infections caused by *M pneumoniae* don't develop CA titers, and when development does occur, it often takes place during convalescence. A variety of other diseases, including Legionella infection, autoimmune disorders, and dysproteinemic states can cause elevated CA titers.[1]

The CF results analyzed differed greatly from our IFA results. This may be due in part to our having chosen a relatively conservative single titer cutoff of 1:256 as indicative of active or recent infection. This titer was chosen because of the variability in the literature of the meaning of a single elevated titer. If a lower titer of 1:64 had been chosen instead, we could claim evidence of active or recent infection in 6.3% of these patients. This would more closely agree with our IFA result of 3.9%. However, some authors have suggested that a single titer of 1:64 or greater can only indicate active or recent infection if CA titers are also elevated at that level.[11]

There is a trend towards higher titers in younger age groups (Table 2). This is consistent with the findings in most other studies, although our results may be biased by the relatively few patients in our study with high titers. Others have reported that when only males are considered, there is not much variation in the percent positivity between different age groups.[7]

Conclusion

In summary, using an IFA test and analyzing data from compilations of CA and CF titers, we have demonstrated (using conservative criteria) an incidence of significant antibody levels to *M pneumoniae* in from 0.4% to 5.7% of the populations studied. These findings suggest that *M pneumoniae* could represent a small but significant cause of pneumonia in patients at this VAMC.

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Trends in Meningococcal Disease

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Meningococcal disease occurs in both endemic and epidemic forms. Current trends in the epidemiology and control of this disease are reviewed.

Infection with *Neisseria meningitidis,* most frequently manifest by meningococcemia and meningitis, is an ancient disease, but its early history remains unclear because of the difficulty in differentiating it from similar syndromes. The disease was first recognized in epidemic form in Geneva, Switzerland, in 1805 by Gaspard Vieusseux. One year later in Medfield, Massachusetts, an outbreak was described by Danielson and Mann.[1] Since then, extensive outbreaks have occurred in virtually all parts of the world. In Sao Paulo, Brazil, during an epidemic in 1971, almost one in every 300 persons developed invasive meningococcal disease during a one-year period.[2] Another epidemic in Finland, which began in 1973 in the civilian population and spread to the armed forces within a year, serves as a reminder of the potential virulence and infectivity of the meningococcal organism.[3]

General Epidemiology

Epidemiological data, available in this country since 1920 and reported by the Centers for Disease Control (CDC), show that three major epidemics of meningococcal disease have occurred, with peaks in 1929, 1936, and 1943. At those times the case rates per 100,000 population were 8.6, 5.7, and 13.6, respectively. The epidemics show some evidence of cyclical occurrences, with peaks of high prevalence occurring at 8-to-12-year intervals. No major epidemic of meningococcal disease has occurred in the United States since 1946, although localized community outbreaks have been reported. The most recent outbreak of any size occurred in the early 1950s, with a peak incidence of 3.2 cases per 100,000 population in 1953.[4]

N meningitidis causes both endemic and epidemic disease, and it is the second most common cause of bacterial meningitis in the United States (approximately 20% of all cases), affecting an estimated 3,000 people each year. During 1986, 2,594 sporadic cases in the United States were reported to the CDC. The case rate was 1.2 cases per 100,000 population, the same as the rate in 1985.

The incidence of endemic meningococcal disease peaks in the late winter to early spring and is significantly lower in summer and autumn. Children are particularly at risk, with some evidence suggesting a higher incidence in boys than in girls. Attack rates are highest among children aged 6 to 12 months and then steadily decline; in children 5 years old, the incidence approximates that for adults. In 1986, age-specific attack rates peaked at 16.3 cases per 100,000 among infants under 1 year of age; it was 4.5 cases per 100,000 among children 1 to 4 years of age. Approximately 50% of reported cases affected children under 5 years of age.[5]

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Serogroups

Meningococci can be subgrouped on the basis of capsular polysaccharides located on the surface of the organism. In 1950, four serogroups of meningococci became known and were designated A, B, C, and D. In 1961, three new groups, named X, Y, and Z, were identified. In 1968, two additional groups, 29E and W135, were added.[4] A new serogroup (L) of *N meningitidis* has been reported by Canadian workers.[6]

The predominant serogroups of meningococci causing disease have changed over a period of time. Before 1956, group A meningococci were responsible for more than 90% of the cases occurring during large epidemics in the United States. When widespread resistance to sulfonamides was recognized in 1963, group B organisms were responsible for approximately 80% of cases of disease in both military and civilian populations. In 1964, the frequency of group B isolates in the military began to decline, and by 1967 group C was responsible for a majority of the cases. In 1971-72, in both civilian and military populations, group C organisms accounted for 63% and group B for 28% of the cases. By 1978, a further shift had occurred so that group B meningococci were responsible for 49%, group C 29%, and group Y 8.6%. An 11.6% of the cases were due to isolates of other groups, including 3.9% group A organisms, and the balance due chiefly to W135.[4]

Currently, serogroup B accounts for 50% to 55% of all cases, serogroup C for 20% to 25%, and serogroup W135 for 15%. Serogroup Y (10%) and A (1% to 2%) account for nearly all remaining cases. Serogroup W135 has emerged as a major cause of disease only since 1975.[7] While serogroup A causes only a small proportion of endemic disease in the United States, it is the most common cause of epidemics elsewhere. Less commonly, serogroups B and C can also cause epidemic disease.[8] The factors responsible for the changes in serogroups causing meningococcal disease are not completely defined.[4]

Man represents the only recognized reservoir of the meningococcus. The portal of entry and exit is the upper respiratory tract.

Transmission

Man represents the only recognized reservoir of the meningococcus. The portal of entry and exit is the upper respiratory tract, and the means of spread is essentially person to person by way of airborne droplets or by inanimate objects which are contaminated by the nasopharyngeal secretions of individuals harboring the organism. The extreme sensitivity of the organism to adverse physical conditions, such as heat and low humidity, makes necessary intimate contact between two individuals for its spread.[9]

Meningococcal meningitis generally is a disease of children who acquire *N meningitidis* from an adult carrier, usually in the same family. The disease has increasingly occurred following exposure within day-care centers to children and adults who are carriers or who have infections. The attack rate for meningococcal disease in family contacts, usually occurring simultaneously with the first case, is 1%. This rate is 1000-fold greater than the rate in the general population. The risk of meningitis in day-care contacts of children with meningococcal disease is 1/1000.[10]

For many years now, it has been recognized that there is a high nasopharyngeal carriage rate of meningococci in households of persons with active disease.[11] The spread of meningococcal infection within households was studied during an epidemic of group C meningococcal disease in Sao Paulo, Brazil, in 1972.[12] The carriage rate was higher (14.2%) in households with a case of meningococcal disease than in households without a case (3.6%). Carriage rates were highest in households with a case in an infant (37.8%), intermediate in households with a case in a child 1 to 14 years of age (17.5%), and lowest in households with a case in an adult (6.9%). These results tend to support the hypothesis that meningococcal infection is usually introduced into families by adults, spreading subsequently to other family members by vertical transmission.

Immunity and Susceptibility

The vast majority of persons exposed to pathogenic meningococci become carriers rather than becoming infected. It appears that susceptibility to disease correlates best with a lack of serum bactericidal antibody. In a series of well conceived studies, Goldschneider and associates presented results of

systematic investigations of human immunity to the meningococcus.[13] By use of population surveys, these investigators demonstrated an inverse relationship between the age-related incidence of meningococcal disease and the age-specific prevalence of serum bactericidal activity. Ninety percent of meningococcal disease occurred in children less than 2 years of age, a period when bactericidal antibody is lowest. The prevalence of bactericidal activity is highest at birth and among adults and lowest in infants between 6 and 24 months of age. In the neonatal period, immunity is related to passive transfer of IgG antibodies from mother to fetus across the placenta. These antibodies persist in an infant from birth up to 3 months of age, after which they are generally undetectable until the baby is approximately 8 months of age.[10]

Active immunization may occur as a result of carriage of nontypable, nonpathogenic meningococcal strains.

In order to test the hypothesis of protective humoral immunity in meningococcal disease, a prospective study was performed among entering army recruits.[13] This was in anticipation of the occurrence of meningococcal disease during the eight-week training period. A total of 54 baseline sera were available from recruits who later developed systemic meningococcal disease and for whom the homologous strain was available. Bactericidal titers of 1:4 or greater were found in only 3 (5.6%) of these sera, compared with 82.2% of those of 540 baseline control sera from recruits who did not develop meningococcal disease. The patients themselves had a specific immunologic response to the infection, implying that susceptible individuals were deficient in antimeningococcal activity because they lacked previous exposure to meningococcal antigens.

The fate of individuals who lack bactericidal antibodies to pathogenic meningococci was determined during an outbreak of group C meningococcal meningitis among military recruits.[13] Susceptibility to disease correlated with the absence of serotype-specific bactericidal activity. An 81.5% of presumed susceptible individuals acquired a strain of meningococcus, but only 24.1% acquired strains similar to the one that was producing the infection. Of the exposed susceptible recruits, 38.5% developed systemic meningococcal infections.

The same investigators presented data which suggested that natural immunity to meningococcal disease is initiated, reinforced, and expanded by intermittent nasopharyngeal carriage throughout life of different strains of meningococci.[14] Among the recruits studied, 92% of carriers developed bactericidal antibodies against the homologous strains, and 87% also developed cross-reacting antibodies to heterologous strains of pathogenic meningococci. The antibody responses occurred within two weeks of the onset of the carrier state and were characterized by an increase in titer of specific IgG, IgM, and IgA antibodies to meningococci. Surveys of pediatric populations have suggested that active immunization may occur as a result of carriage of nontypable, nonpathogenic meningococcal strains.[15] Furthermore, bactericidal antibodies that cross-react with meningococci may be induced by contact with unrelated organisms such as *Escherichia coli* and *Bacillus* strains.[16]

Although circulating serum antibodies and specific secretory IgA seem to be important in protecting the human host, this may not be the sole explanation for susceptibility to meningococcal disease. In a few cases, genetic factors may be important. Subjects with hereditary complement defects have an increased susceptibility to meningococcal disease. Environmental factors that are believed to influence susceptibility include overcrowding, inadequate living conditions, an antecedent viral respiratory infection, stress, and climate.[17]

Control of Infection

There are two basic approaches to control of meningococcal disease — chemoprophylaxis and immunization. Neither mode has been studied in a double-blind controlled trial in household contacts.

Antimicrobial chemoprophylaxis. Chemoprophylaxis of contacts of patients with meningococcal disease is based on estimates of secondary attack rate, as well as the efficacy of a given drug in eradicating carriage and in preventing secondary cases. In epidemics, the household secondary attack rate ranges from 1.1% to 4.5%. In the United States, the secondary attack rate in household members after a sporadic case of meningococcal disease is approximately 3 cases per 1000 household members.

This rate is 1000-fold greater than the overall reported rate of meningococcal disease in the US.[16]

Chemoprophylaxis of intimate contacts is the chief preventive measure in sporadic cases of *N meningitidis*. Intimate contacts include (1) household members, (2) day-care contacts, and (3) anyone directly exposed to the patient's oral secretions, such as through mouth-to-mouth resuscitation or kissing.[8] Intimate contacts do not include school exposure and medical personnel exposure unless there is mouth-to-mouth resuscitation. In general, school dormitory or fraternity contacts should receive prophylaxis only if they sleep in the same room as the index case.[18]

Antimicrobial chemoprophylaxis with sulfonamides is effective in eliminating nasopharyngeal carriage and in reducing the disease attack rates during epidemics caused by susceptible organisms. The variable resistance of meningococci to sulfadiazine, however, has made it impractical to rely on the efficacy of this agent. In 1975, the CDC reported that 27% of all case isolates were resistant to sulfadiazine. Penicillin and ampicillin are not effective in eradicating nasopharyngeal carriage, nor do they prevent disease when given prophylactically.[16]

Rifampin has been shown to be 90% effective in eradicating nasopharyngeal carriage and is considered the drug of choice for chemoprophylaxis unless the causative organism is known to be sensitive to sulfadiazine.[8] It should be noted that resistance to rifampin can develop during prophylaxis.[18] The dosage as well as the nature and incidence of side effects to rifampin have been reviewed.[19] In general, no serious side effects have been noted. However, rifampin prophylaxis is not recommended for pregnant women, as the drug is teratogenic in laboratory animals. Also, in addition to turning urine orange, rifampin is excreted in tears, resulting in the staining of contact lenses, which therefore should not be used during the course of therapy.

No vaccine against serogroup B, the major cause of meningococcal disease in the US, is yet available.

Minocycline, also, eradicates *N meningitidis* from the nasopharynx but has been associated with a higher incidence of side effects, including vestibular reactions and possible dental staining in young children, precluding its use in those aged less than 9 years.

The reduction in carriage rates due to both minocycline and rifampin persists for at least five weeks after treatment.[16] Since systemic antimicrobial therapy of meningococcal disease does not reliably eradicate nasopharyngeal carriage of *N meningitidis,* it is important to give chemoprophylaxis to the index patient before discharge from the hospital.[8]

Meningoccocal polysaccharide vaccines. The rationale for use of meningococcal polysaccharide vaccines is based on the relatively long interval between the primary case and a secondary case. In a study by Munford and associates,[12] in 12 of 26 secondary cases, patients became ill five or more days after recognition of the primary case. Since antibody levels begin to increase approximately seven days after vaccination, it is a reasonable assumption that some secondary cases may be prevented by vaccination.

The only meningococcal vaccine licensed in the United States is quadrivalent and contains serogroups A, C, Y, and W135. The vaccine consists of 50 μg each of the respective purified bacterial capsular polysaccharides. The antibody responses to each of the four polysaccharides are serogroup-specific and independent. No vaccine against serogroup B, the major cause of meningococcal disease in the US, is yet available. For both adults and children, vaccine is administered subcutaneously as a single 0.5 ml dose. Infrequent and mild adverse reactions occur, principally localized erythema for one to two days. Up to 2% of young children develop fever transiently after vaccination. It is deemed prudent not to immunize pregnant women unless there is a substantial risk of infection.[8]

Serogroup A and C vaccines have been shown to have clinical efficacy and to be of use in controlling epidemics. The group Y and W135 polysaccharides have been shown to be safe and immunogenic in adults and in children over 2 years of age. Clinical protection has not been demonstrated directly, but is assumed, based on the production of bactericidal antibody. Group A vaccine is effective in children 3 months old and older; group C vaccine is effective in those who are at least 2 years old. Antibodies against the group A and C polysaccharides decline

markedly over the first three years following a single dose of the vaccine. This antibody decline is more rapid in infants and young children than in adults. This is why revaccination is recommended for children at high risk of infection who were first immunized at less than 4 years of age.

The quadrivalent vaccine has been shown to be of use in aborting outbreaks due to serogroups represented in the vaccine and should be used in their control. Routine immunization is recommended for particular high-risk groups including individuals with terminal complement component deficiencies and those with anatomic or functional asplenia. All military recruits currently receive the quadrivalent vaccine. Vaccination with the A-C vaccine may benefit some travelers to countries recognized as having hyperendemic or epidemic disease, such as a part of sub-Saharan Africa which extends from Mauritania in the west to Ethiopia in the east.[8]

Conclusions

Major advances have occurred in understanding the epidemiology and host defenses against meningococcal disease, and techniques of modern immunochemistry have brought us closer to its control. In spite of these advances, there are several aspects of the behavior of the meningococcus that remain to be fully explained and understood. Epidemics still arise unexpectedly in industrialized countries, such as the epidemic in Finland. In areas where meningococcal infection is endemic, localized outbreaks arise from time to time for which there is no obvious explanation.[17] Furthermore, the factors responsible for the changes in serogroups causing meningococcal disease await full elucidation.[4]

One of the promising areas in understanding the epidemiology of *N meningitidis* is the adaptation of the DNA fingerprinting technique to analysis of the meningococcal genome.[20] DNA fingerprinting has potential as an efficient tool in practical meningococcal epidemiology. Similarly, the prospects for future meningococcal vaccines are also encouraging. Work is continuing on a serogroup B meningococcal vaccine as well as on improved A and C vaccines. Candidate vaccines include capsular polysaccharides complexed with meningococcal outer-membrane proteins or covalently linked to carrier proteins.[8] The clinical and practical applications of all of these advances are eagerly awaited.

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The Oklahoma State Department of Health (OSDH) began the Behavioral Risk Factor Survey (BRFS) in March 1988. Developed by the Centers for Disease Control, the BRFS is a standardized, close-ended questionnaire that collects information on self-reported health habits and risk factors that may affect health outcomes. In 1988, Oklahoma was part of a 47-state network that participated in the BRFS.

Participants in the survey are selected randomly through computer-generated telephone numbers. Interviews are completed over the telephone for those who are eighteen years and older. Currently, OSDH completes 99 interviews per month, and in 1988, data on 987 interviews were collected.

The BRFS is significant because it is the first comprehensive, standardized survey to collect information on the health risk factors of Oklahomans. With these data, comparisons will be made with data from other participating states to help determine the extent of Oklahoma's risks for serious health concerns.

One trend already appearing, based on 1988 data, is a higher self-reported rate of high blood pressure as compared to the vast majority of other states reporting on this risk factor in 1986. In 1988, 21% of the Oklahomans surveyed reported they were hypertensive as defined by the National Heart, Lung and Blood Institute. This compares to an average of 17.5% for self-reported hypertension in 1986, with a range of 12% to 22%. This high self-reported rate of hypertension seems to closely correlate with a report from the *MMWR*, vol. 37, no. 20, which showed Oklahoma as having one of the highest rates of deaths due to ischemic heart disease in the nation during 1985 (ranked 7th out of 50 states and the District of Columbia for men of all ages, *MMWR*, 37:20, p. 320).

Such information about the health risks of Oklahomans will be essential in developing comprehensive prevention programs. As BRFS data is looked at more in depth, interventions will be targeted for those specific health concerns that are of significant risk to Oklahomans. For more information about the survey, contact Neil E. Hann, MPH, Health Education and Information Service, Oklahoma State Department of Health, (405) 271-5601.

DISEASE	Monthly Reporting Period Ending 2/28/89	TOTAL TO DATE		
		This Year	Last Year	5 Yr. Avg.
ACQUIRED IMMUNE DEFICIENCY SYNDROME	8	17	23	6
CAMPYLOBACTER INFECTIONS	8	14	18	24
CHLAMYDIA INFECTIONS	196	345	325	#
ENCEPHALITIS, INFECTIOUS	1	3	1	1
GIARDIA INFECTIONS	13	28	25	31
GONORRHEA (Use ODH Form 228)	533	1115	1113	1715
HAEMOPHILUS INFLUENZAE INVASIVE DISEASE	12	28	39	38
HEPATITIS A	43	86	158	87
HEPATITIS B	19	32	35	31
HEPATITIS, NON-A NON-B	5	6	5	7
HEPATITIS UNSPECIFIED	5	5	5	13
HUMAN IMMUNODEFICIENCY VIRUS INFECTIONS	55	82	*	*
MENINGITIS, BACTERIAL (non-meningococcal, non H. Influenzae)	2	2	4	9
MENINGOCOCCAL INFECTIONS	2	3	1	6
MUMPS	18	58	46	—
PERTUSSIS	3	3	1	9
RABIES (ANIMAL)	4	9	4	7
ROCKY MOUNTAIN SPOTTED FEVER	1	1	1	0
SALMONELLA INFECTIONS	16	40	39	41
SHIGELLA INFECTIONS	4	13	22	25
SYPHILIS (Use ODH Form 228)	7	13	32	28
TUBERCULOSIS	9	10	23	29
TULAREMIA	0	1	2	1

#Made Reportable in 1985 —Made Reportable in 1987 *Made Reportable in 1988

Injuries	Total to Date This Year	Fatalities No. (%)
BURN	73	15 (21)
TRAUMATIC SPINAL CORD INJ	9	3 (33)
DROWNING/ NEAR DROWNING	4	4 (100)

Diseases of Low Frequency	Total to Date This Year
AMEBIASIS	0
BRUCELLOSIS	0
LEGIONNAIRES' DISEASE	5
MALARIA	0
MEASLES (RUBEOLA)	10
REYE SYNDROME	0
RUBELLA	0
TETANUS	0
TOXIC SHOCK SYNDROME	0
TYPHOID FEVER	0

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Hometown inauguration

Tulsa's John R. Alexander, MD, becomes 84th president of OSMA

John R. Alexander, MD, a board certified Tulsa internist, became the 84th president of the Oklahoma State Medical Association (OSMA) early this month.

Dr Alexander

He assumed office May 5 during the OSMA Annual Meeting at the Sheraton Kensington Hotel in Tulsa, succeeding Ray V. McIntyre, MD, a Kingfisher family physician.

A Tulsa native, Dr Alexander is a graduate of the University of Oklahoma, Norman, and the OU College of Medicine, where he earned election to Alpha Omega Alpha, the national medical honor society.

He interned at the then St. John Hospital in Tulsa before completing his residency in internal medicine at Methodist Hospital of Dallas, serving as chief resident in 1964 and 1965.

Long active in organized medicine, Dr Alexander is past president of Tulsa County Medical Society, Tulsa Internists Society, Tulsa County Heart Association, and the University of Oklahoma College of Medicine Alumni Association, and currently serves as an alternate delegate from Oklahoma to the American Medical Association.

He has served as chairman of the board of directors of the Tulsa City-County Health Department and chief of the medical staff of St. John Medical Center. He also was a ten-year member of the board of the Oklahoma State Heart Association.

A clinical associate professor of medicine at the University of Oklahoma Tulsa Medical College, Dr Alexander is a diplomate of the American Board of Internal Medicine and a Fellow of the American College of Physicians.

The new OSMA president is an elder in the Kirk of Hills Presbyterian Church and serves on the board of directors of the Wright City Community Clinic.

Dr Alexander and his wife, Marjorie, have six children, son Paul and daughter-in-law Cathey, sons Jim and Tom and daughters Stephanie, Cindy, and Karen; and two grandchildren, Bobby and Matthew.

State medical license renewals must reach board by June 30

State physicians should note that applications for renewal of Oklahoma medical licenses have been mailed. Application and fee must be returned to the office of the Board of Medical Licensure and Supervision on or before June 30, 1989, to assure continuation of a physician's active license to practice medicine and surgery.

The fee for renewal is $100.00 *if received on or before June 30.* Licenses unrenewed after June 30 become *inactive* for 60 days, after which they become suspended for failure to renew. If the renewal application is received *after June 30 but before August 29,* the fee is $200.00. If the application is received *after August 29,* the fee is $300.00.

Mail renewal applications and fees to Oklahoma Board of Medical Licensure and Supervision, PO Box 18256, Oklahoma City, OK 73154-0256.

Applicants are reminded to designate whether they *do* or *do not* wish to be registered as a dispensing physician. Where a designation is not indicated, the physician will automatically be identified as *not* registered to dispense, and dispensing without registration by the state board is unlawful.

Physicians who have questions or who *have not received their application for license renewal* should call the board office at (405) 848-6841.

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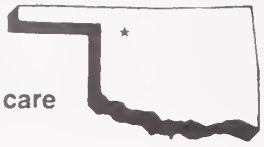

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Health lawyers help physicians deal with today's legal issues

Oklahoma physicians, hospitals, and other health care providers should be aware that health care lawyers in the state are available to serve them.

In 1987 the Oklahoma Health Lawyers Association was formed. In 1988 the Oklahoma Bar Association recognized the specialized services made available by health lawyers and established a Health Law Section.

Approximately 75 lawyers throughout Oklahoma are members of the section.

The association consists primarily of lawyers who represent physicians, dentists, hospitals, nursing homes, HMOs, health care ventures, and other health care providers. It focuses on legal matters peculiar to those groups.

The practice of medicine has been greatly affected by legal developments during the past ten years. The influx of practitioners, stricter and more complex government regulation, and the development of intense competition among health care providers have given rise to new legal issues. Additionally, legal issues have resulted from the introduction of alternative delivery systems, the expansion of notions of professional liability, the extension of rights of allied health professionals, and advancements in medical technology.

Among the numerous areas addressed by the association are physician credentialing; quality assurance and peer review activities; restraint of trade; joint ventures among hospitals, physicians, and other providers; medicare fraud and abuse; reimbursement from the government and other third-party payors; PROs; tax issues affecting the health care industry; and long-term care.

Also considered are contracting and contract negotiation; acquisition of hospitals and physician practices; biomedical ethical issues; licensing; certificates of need; representation before administrative agencies; drafting legislation; alternative delivery systems; and tort reform.

Members of the association and the health law section of the Bar Association participate in medicolegal matters on a state and national level. Many of the members are affiliated with the National Health Lawyers Association, the American Academy of Hospital Attorneys, the Health Law Forum of the American Bar Association, and other national organizations.

"Nothing but praise"

JOURNAL wins Special Award in Sandoz journalism competition

The JOURNAL has received national recognition once again, winning a Special Award in this spring's 14th annual Sandoz Pharmaceuticals medical journalism competition.

This is the second award in three years for the JOURNAL, which won First Prize in 1987 and was thus ineligible for the 1988 competition. The JOURNAL also earned top honors in 1978 and Honorable Mention in 1983.

In excellent company this year, the JOURNAL (circ. 3900) finished second only to the much larger *Journal of the Florida Medical Association* (circ. 16,000) and tied with the *Journal of the Medical Association of Georgia* (circ. 7700), also a Special Award winner.

Awards are based on design and editorial content. A Sandoz release called Editor-in-Chief Mark Johnson's editorials and the Leaders in Medicine articles "outstanding."

Judge Paul Fisher, professor at the University of Missouri School of Journalism, had "nothing but praise," saying the JOURNAL has always handled its specifications and pages with "care and thought." He called the JOURNAL's cover "very distinctive," noting it displays "the sort of persnickety attention to detail that you expect to see in the JOURNAL."

Twenty-two prizes were awarded this year to publications in four categories — state medical journals, county and city medical publications, state pharmaceutical publications, and journals and other nonemployee publications produced by hospital and medical groups.

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DEATHS

William Lawrence Bond, MD
1925 - 1989

OSMA Life Member William L. Bond, MD, a retired gynecologist-obstetrician, died March 26, 1989. A native of Ada, the Oklahoma City resident was a 1947 graduate of the University of Oklahoma School of Medicine. He started his practice after serving two years as a medical officer in the US Navy during the Korean conflict.

IN MEMORIAM

1988

James William Finch, MD	March 4
John Junior Donnell, MD	March 7
Douglas Earl Wilson, MD	March 29
Tony Willard Pratt, MD	April 21
James Park Dewar, Jr., MD	May 5
Hugh Albert Stout, MD	May 7
William Claude McCurdy, Jr., MD	May 22
James Robert Carroll, MD	May 28
Dean Crittenden Walker, MD	June 11
Vernon Dean Cushing, MD	June 19
James Breese Darrough, MD	June 29
Paul Thurston Powell, MD	July 1
Jack Burgess Tolbert, MD	July 12
John Ralph Rafter, MD	August 1
Luther Harrison Becker, MD	August 9
Clemens Maximilian Hartig, MD	August 27
John Copeland Pickard, MD	August 31
Peter A. MacKercher, MD	September 17
Haskell Smith, MD	September 27
William Eldon Wendel, MD	October 5
Tullos Oswell Coston, MD	October 21
Frank Herbert Austin, MD	November 11
Lyman Cunningham Veazey, MD	November 11
Loyd Lee Long, Jr., MD	December 6
Michael W. Brown, MD	December 25
Charles Nathaniel Atkins, MD	December 28
French LaZelle Worthen, MD	December 28

1989

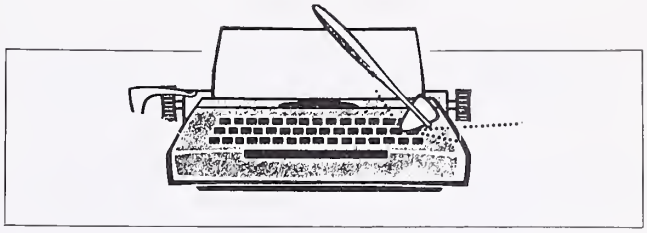
Michael Bailey McCarty, MD	January 22
Alexander Shadid, MD	February 2
Moorman Paul Prosser, MD	February 12
Robert Vern Weger, MD	February 18
William Lawrence Bond, MD	March 26

REACTION TIME

Tulsa doctor correct: procedure described erroneously in JOURNAL

To the Editor: In the Volume 82, March 1989 edition of the JOURNAL, Dr Zuhdi et al stated [p 109], "Under local anesthesia, the needle is directed from the top of the triangle formed between the sternal and clavicular heads of the sternocleidomastoid muscle and advanced slowly, while aspirating, towards the contralateral (?) nipple." I wonder if they really intended to say "ipsilateral nipple." Directing the needle as they described will result in a very high incidence of carotid artery or tracheal perforation, or both. The currently accepted technique calls for directing the needle to the ipsilateral nipple.

J. W. Greenawalt III, MD
Tulsa



To the Editor: I received your letter of April 4, 1989, regarding our article "Experience with Endomyocardial Biopsy in 23 Patients with Heart Transplants" (published in your March 1989 issue) along with a copy of the letter from Dr J.W. Greenawalt III, MD.

This is to advise that I agree with Dr Greenawalt's letter.

Nazih Zuhdi, MD
Director and Surgeon-in-Chief
Oklahoma Transplantation Institute

BOOK SHOP

The Youngest Science: Notes of a Medicine-Watcher. By Lewis Thomas. New York: The Viking Press, 1983. Pp 270, $14.75.

Lewis Thomas was born in Flushing, New York, in 1913. His father was a physician and his mother a nurse. Thomas was graduated from Harvard Medical School. This book, an informal autobiography, takes us from his boyhood to his present position as chancellor of the Memorial Sloan-Kettering Cancer Center in New York. Along this path the author recalls his days as a medical student at Harvard University, where he graduated in 1937, and as a house officer in various disciplines, including pediatrics, neurology, and pathology. He also tells us about his military experience in Guam and Okinawa as a member of the Rockefeller Naval Research Unit. His experiences as a faculty member at Johns Hopkins, at Tulane University and the Research Division of Microbiology and Immunology, at the University of Minnesota in the Department of Pediatrics, and as professor and head of the Department of Pathology at New York University are recounted. He later became dean of the medical school at Yale University and subsequently at New York University.

Thomas discusses in an engaging style many topics including medical education, the relationship of doctors and patients, the role of nurses, being a hospital patient, and other issues. He tells us in detail about his own personal research dealing with endotoxins, mycoplasma and rheumatoid arthritis, and studies of the placenta.

Many physicians will identify him from his series of essays that appeared in the *New England Journal of Medicine* which were eventually published in book form in two volumes, *The Lives of a Cell* and *The Medusa and The Snail.*

The reader will be impressed by the excellence of Thomas's style and his cosmopolitan interests. The volume is an absorbing account of the description of medicine greatly transformed by technology and the growth of scientific knowledge.

—Harris D. Riley, Jr., MD
Oklahoma City

To Provide Safe Passage: The Humanistic Aspects of Medicine. Edited by Pauline L. Rabin and David Rabin. New York: Philosophical Library, 1985, pp 258, $19.95.

David and Pauline Rabin graduated from medical school in Johannesburg, South Africa, completed postgraduate training at Johns Hopkins, and were members of the faculty there for ten years. After spending five years in Israel, they returned to the United States and joined the faculty at Vanderbilt University Medical Center. At Vanderbilt, Rabin was a professor of medicine and obstetrics and genecology and an internationally known endocrinologist. His

wife is a member of the Department of Psychiatry.

In 1979, at the age of 45 years, Dr David Rabin experienced the initial symptoms of amyotrophic lateral sclerosis. In this thought-provoking volume, he and his wife describe forcefully the effect of this chronic, fatal disease on his career, on his family, and especially on the relationship with his fellow physicians and other professional contacts. In a chapter entitled "The Pariah Syndrome: The Social Disease of Chronic Illness," the Rabins discuss in detail the

relationships with his coworkers. They point out how happy they were at Vanderbilt, and then how various friends and contacts interacted with him. He describes his increasing social and physical isolation by colleagues, who avoided him in many cases to "respect his privacy."

Following a foreword by John E. Chapman, dean of the Vanderbilt University Medical School, and a preface by the Rabins, the book is made up of 20 essays contributed by colleagues of the Rabins at Vanderbilt as well as others throughout the country. Some contributors are patients with chronic diseases; others are physicians or parents of children with chronic disease. They deal with cancer, mental illness, mental retardation, and other chronic diseases.

After a five-year battle, David Rabin died on October 26, 1984, of amyotrophic lateral sclerosis. Following his paralysis and loss of his ability to speak, Rabin had communicated with family and colleagues through the use of a computer system. Until his final days he continued to direct research in the field of endocrinology.

The book is dedicated to Dr Grant W. Liddle, former chairman of the Department of Medicine at Vanderbilt.

This small book describing Rabin's heroic battle against and marvelous attitude towards his disease should be read by all persons who participate in patient care.

—Harris D. Riley, Jr., MD
Oklahoma City

Pseudoseizures. Edited by Terrence L. Riley and Alec Roy. Baltimore: Williams and Wilkins Co., 1982. Pp 231, price $40.00.

This book is edited by a neurologist (Dr Riley) and a psychiatrist (Dr Roy). It also contains contributions by thirteen additional physicians and psychologists. After an introductory chapter on the history of epilepsy and hysteria, the book is divided into three main categories — medical and neurological aspects, intensive monitoring, and use of videotapes in psychiatric management. It discusses in detail the various periodic syndromes encountered in neuropsychiatric practice.

The section on the clinical aspect of pseudoseizures is comprehensive and useful. It covers such topics as syncope, migraine, hyperventilation, cataplexy, and other less common disorders. Particularly useful is the chapter by Scott entitled "Recognition and Diagnostic Aspects of Non-epileptic Seizures."

The second major section contains a chapter on the use of the electroencephalogram in pseudoseizures and of videotape recording in epilepsy and related disorders.

In the third section, psychiatric aspects are discussed. This section includes definitions of the various psychogenic illnesses that can resemble seizures. It contains interesting chapters on problems with anticonvulsants in patients with hysterical seizures and another on the legal aspects of pseudoseizures.

This small book deals with subjects that are encountered not infrequently but are rarely discussed in textbooks. It provides a good balance between medical and psychiatric aspects and will be of interest to all concerned with this problem.

—Harris D. Riley, Jr., MD
Oklahoma City

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1. Data on file, Lilly Research Laboratories.

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Precautions: *General* — 1. Symptomatic response to nizatidine therapy does not preclude the presence of gastric malignancy.

2. Because nizatidine is excreted primarily by the kidney, dosage should be reduced in patients with moderate to severe renal insufficiency.

3. Pharmacokinetic studies in patients with hepatorenal syndrome have not been done. Part of the dose of nizatidine is metabolized in the liver. In patients with normal renal function and uncomplicated hepatic dysfunction, the disposition of nizatidine is similar to that in normal subjects.

Laboratory Tests — False-positive tests for urobilinogen with Multistix® may occur during therapy with nizatidine.

Drug Interactions — No interactions have been observed between Axid and theophylline, chlordiazepoxide, lorazepam, lidocaine, phenytoin, and warfarin. Axid does not inhibit the cytochrome P-450-linked drug-metabolizing enzyme system; therefore, drug interactions mediated by inhibition of hepatic metabolism are not expected to occur. In patients given very high doses (3,900 mg) of aspirin daily, increases in serum salicylate levels were seen when nizatidine, 150 mg b.i.d., was administered concurrently.

Carcinogenesis, Mutagenesis, Impairment of Fertility — A two-year oral carcinogenicity study in rats with doses as high as 500 mg/kg/day (about 80 times the recommended daily therapeutic dose) showed no evidence of a carcinogenic effect. There was a dose-related increase in the density of enterochromaffin-like (ECL) cells in the gastric oxyntic mucosa. In a two-year study in mice, there was no evidence of a carcinogenic effect in male mice; although hyperplastic nodules of the liver were increased in the high-dose males as compared with placebo. Female mice given the high dose of Axid (2,000 mg/kg/day, about 330 times the human dose) showed marginally statistically significant increases in hepatic carcinoma and hepatic nodular hyperplasia with no numerical increase seen in any of the other dose groups. The rate of hepatic carcinoma in the high-dose animals was within the historical control limits seen for the strain of mice used. The female mice were given a dose larger than the maximum tolerated dose, as indicated by excessive (30%) weight decrement as compared with concurrent controls and evidence of mild liver injury (transaminase elevations). The occurrence of a marginal finding at high dose only in animals given an excessive and somewhat hepatotoxic dose, with no evidence of a carcinogenic effect in rats, male mice, and female mice (given up to 360 mg/kg/day, about 60 times the human dose), and a negative mutagenicity battery are not considered evidence of a carcinogenic potential for Axid.

Axid was not mutagenic in a battery of tests performed to evaluate its potential genetic toxicity, including bacterial mutation tests, unscheduled DNA synthesis, sister chromatid exchange, mouse lymphoma assay, chromosome aberration tests, and a micronucleus test.

In a two-generation, perinatal and postnatal fertility study in rats, doses of nizatidine up to 650 mg/kg/day produced no adverse effects on the reproductive performance of parental animals or their progeny.

Pregnancy — Teratogenic Effects — Pregnancy Category C — Oral reproduction studies in rats at doses up to 300 times the human dose and in Dutch Belted rabbits at doses up to 55 times the human dose revealed no evidence of impaired fertility or teratogenic effect; but, at a dose equivalent to 300 times the human dose, treated rabbits had abortions, decreased number of live fetuses, and depressed fetal weights. On intravenous administration to pregnant New Zealand White rabbits, nizatidine at 20 mg/kg produced cardiac enlargement, coarctation of the aortic arch, and cutaneous edema in one fetus and at 50 mg/kg it produced ventricular anomaly, distended abdomen, spina bifida, hydrocephaly, and enlarged heart in one fetus. There are, however, no adequate and well-controlled studies in pregnant women. It is also not known whether nizatidine can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. Nizatidine should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers — Studies conducted in lactating women have shown that <0.1% of the administered oral dose of nizatidine is secreted in human milk in proportion to plasma concentrations. Caution should be exercised when administering nizatidine to a nursing mother.

Pediatric Use — Safety and effectiveness in children have not been established.

Use in Elderly Patients — Ulcer healing rates in elderly patients are similar to those in younger age groups. The incidence rates of adverse events and laboratory test abnormalities are also similar to those seen in other age groups. Age alone may not be an important factor in the disposition of nizatidine. Elderly patients may have reduced renal function.

Adverse Reactions: Clinical trials of nizatidine included almost 5,000 patients given nizatidine in studies of varying durations. Domestic placebo-controlled trials included over 1,900 patients given nizatidine and over 1,300 given placebo. Among reported adverse events in the domestic placebo-controlled trials, sweating (1% vs 0.2%), urticaria (0.5% vs < 0.01%), and somnolence (2.4% vs 1.3%) were significantly more common in the nizatidine group. A variety of less common events was also reported; it was not possible to determine whether these were caused by nizatidine.

Hepatic — Hepatocellular injury, evidenced by elevated liver enzyme tests (SGOT [AST], SGPT [ALT], or alkaline phosphatase), occurred in some patients and was possibly or probably related to nizatidine. In some cases, there was marked elevation of SGOT, SGPT enzymes (greater than 500 IU/L) and, in a single instance, SGPT was greater than 2,000 IU/L. The overall rate of occurrences of elevated liver enzymes and elevations to three times the upper limit of normal, however, did not significantly differ from the rate of liver enzyme abnormalities in placebo-treated patients. All abnormalities were reversible after discontinuation of Axid.

Cardiovascular — In clinical pharmacology studies, short episodes of asymptomatic ventricular tachycardia occurred in two individuals administered Axid and in three untreated subjects.

CNS — Rare cases of reversible mental confusion have been reported.

Endocrine — Clinical pharmacology studies and controlled clinical trials showed no evidence of antiandrogenic activity due to Axid. Impotence and decreased libido were reported with equal frequency by patients who received Axid and by those given placebo. Rare reports of gynecomastia occurred.

Hematologic — Fatal thrombocytopenia was reported in a patient who was treated with Axid and another H_2-receptor antagonist. On previous occasions, this patient had experienced thrombocytopenia while taking other drugs. Rare cases of thrombocytopenic purpura have been reported.

Integumental — Sweating and urticaria were reported significantly more frequently in nizatidine- than in placebo-treated patients. Rash and exfoliative dermatitis were also reported.

Hypersensitivity — As with other H_2-receptor antagonists, rare cases of anaphylaxis following administration of nizatidine have been reported. Because cross-sensitivity in this class of compounds has been observed, H_2-receptor antagonists should not be administered to individuals with a history of previous hypersensitivity to these agents. Rare episodes of hypersensitivity reactions (eg, bronchospasm, laryngeal edema, rash, and eosinophilia) have been reported.

Other — Hyperuricemia unassociated with gout or nephrolithiasis was reported. Eosinophilia, fever, and nausea related to nizatidine administration have been reported.

Overdosage: Overdoses of Axid have been reported rarely. The following is provided to serve as a guide should such an overdose be encountered.

Signs and Symptoms — There is little clinical experience with overdosage of Axid in humans. Test animals that received large doses of nizatidine have exhibited cholinergic-type effects, including lacrimation, salivation, emesis, miosis, and diarrhea. Single oral doses of 800 mg/kg in dogs and of 1,200 mg/kg in monkeys were not lethal. Intravenous median lethal doses in the rat and mouse were 301 mg/kg and 232 mg/kg respectively.

Treatment — To obtain up-to-date information about the treatment of overdose, a good resource is your certified regional Poison Control Center. Telephone numbers of certified poison control centers are listed in the *Physicians' Desk Reference (PDR)*. In managing overdosage, consider the possibility of multiple drug overdoses, interaction among drugs, and unusual drug kinetics in your patient.

If overdosage occurs, use of activated charcoal, emesis, or lavage should be considered along with clinical monitoring and supportive therapy. Renal dialysis for four to six hours increased plasma clearance.

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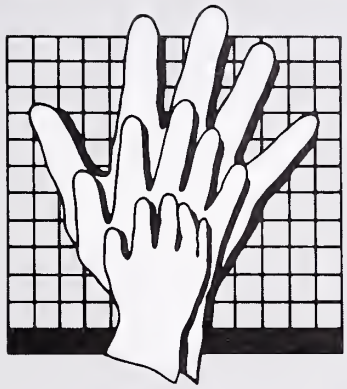

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News

Readers are encouraged to submit news items of interest to Oklahoma physicians. Where dates of meetings, etc, are important, please remember that each issue closes on the first day of the *preceding* month and reaches subscribers in the latter half of the month of publication.

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■ **This year's Private Practice Physician of the** Year Award, presented by the University of Oklahoma College of Medicine Alumni Association, is being shared by two Okeene physicians. General practitioners Claude H. Williams, MD, and Billy Dale Dotter, MD, received the award May 4 at the alumni association's annual dinner-dance. This year the event was held at Tulsa's Sheraton Kensington Hotel in conjunction with the Annual Meeting of the Oklahoma State Medical Association.

■ **The 1988-89 Dean's Lecture Series, spon-**sored by the University of Oklahoma Health Sciences Center (OUHSC), will present "A Vision of the Future" on Tuesday, June 20. Thomas E. Acers, MD, director and chairman of the Dean A. McGee Eye Institute in Oklahoma City, will deliver the lecture. Dr Acers will discuss some major current research areas in the visual sciences. The lecture, which is open to the public and free of charge, will begin at 6 PM in the OUHSC Library Auditorium. For additional information call the Office of the Dean, OUHSC, (405) 271-2265.

■ **Charles P. Wilkinson, MD, Oklahoma City, has** been appointed associate secretary of the American Academy of Ophthalmology's Ophthalmology Monographs Program. He also has been named to the academy's Preferred Practice Pattern Committee, Retina Panel.

■ **R. Wayne Neal, MD, Tulsa cardiologist, was** appointed in March to a one-year term as chairman of the board of governors of the American College of Cardiologists (ACC). He previously served for two years as an ACC governor for Oklahoma. The ACC board of governors includes one or two representatives from each state as well as representatives from the armed services, Canada, and Mexico.

■ **Heart disease patients are often warned** about the potential harmful effects of caffeine, but this advice "is based primarily on anecdote and folklore," says a report in the March *Archives of Internal Medicine*. The study, by Thomas B. Graboys, MD, of the Harvard School of Public Health, Boston, and colleagues finds no evidence that a modest dose of caffeine causes heart rhythm disturbances, "even among patients with known life-threatening arrhythmia." The study involved 50 such patients given either decaffeinated coffee or decaf with 200 mg of caffeine added. Continuous electrocardiographic monitoring showed no differences between the two groups "in either individual or group data on total or repetitive ventricular arrhythmia," the authors say. They acknowledge that there probably are caffeine-sensitive patients who "will experience an aggravation of ventricular or atrial arrhythmias" and need to be individually identified, but say available data suggest that this group "is indeed small."

■ **The Oklahoma State Department of Health** (OSDH) is requesting that anyone having completed one of its HIV Counseling and Testing courses between 1985 and 1987 contact the OSDH AIDS Division (405) 271-4636 for recertification information.

■ **Oklahoma City cardiologist S. Sandy Sanbar,** MD, PhD, JD, has become the twenty-first president of the American College of Legal Medicine (ACLM). Dr Sanbar will head the ACLM, one of 25 such colleges in the medical field, for one year.

■ **The Oklahoma State Department of Health** will provide HIV testing and counseling training to drug and alcohol treatment programs wishing to establish such services for their clients. The training is free of charge. For information contact Pat Damron, AIDS Division, OSDH, (405) 271-4636.

■ **The anti-anxiety drug buspirone may help** smokers cut down on cigarettes by easing tobacco withdrawal symptoms, says a letter in the March *Archives of General Psychiatry*. Authors Frank Gawin, MD, and colleagues at the Yale University School of Medicine, New Haven, Conn, say seven smokers who finished a six-week open trial of buspirone all reported a substantial reduction in smoking, but not total cessation. The drug seems to curb the anxiety, irritability, and fatigue associated with tobacco withdrawal without the weight gain and other symptoms seen in other drug treatments, say the authors, who suggest buspirone be tested in a controlled, double-blind study. In a second letter, Neil Hartman, MD, PhD, of the Veterans Administration Medical Center West Los Angeles, Brentwood, Calif, and colleagues suggest a transdermal nicotine patch can reduce smoking by hospitalized psychiatric patients. Their pilot study involved only three patients, but all consumed substantially fewer cigarettes during the seven hours they wore the patch. The authors are now testing the patch more widely.

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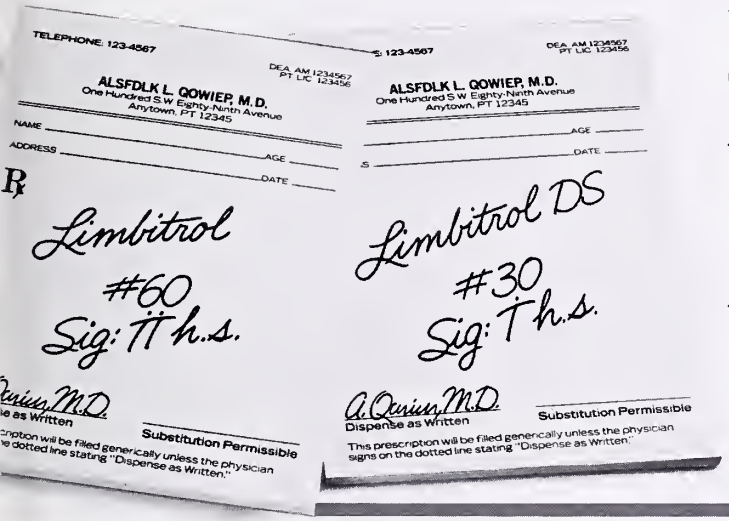

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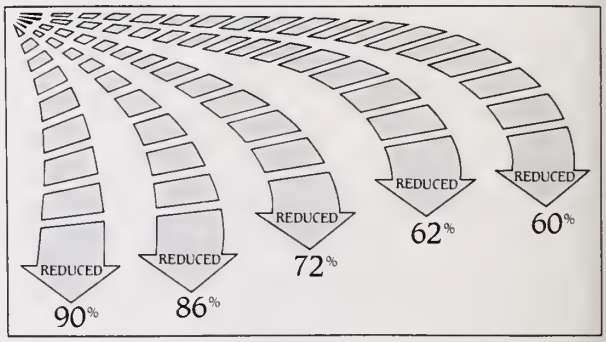

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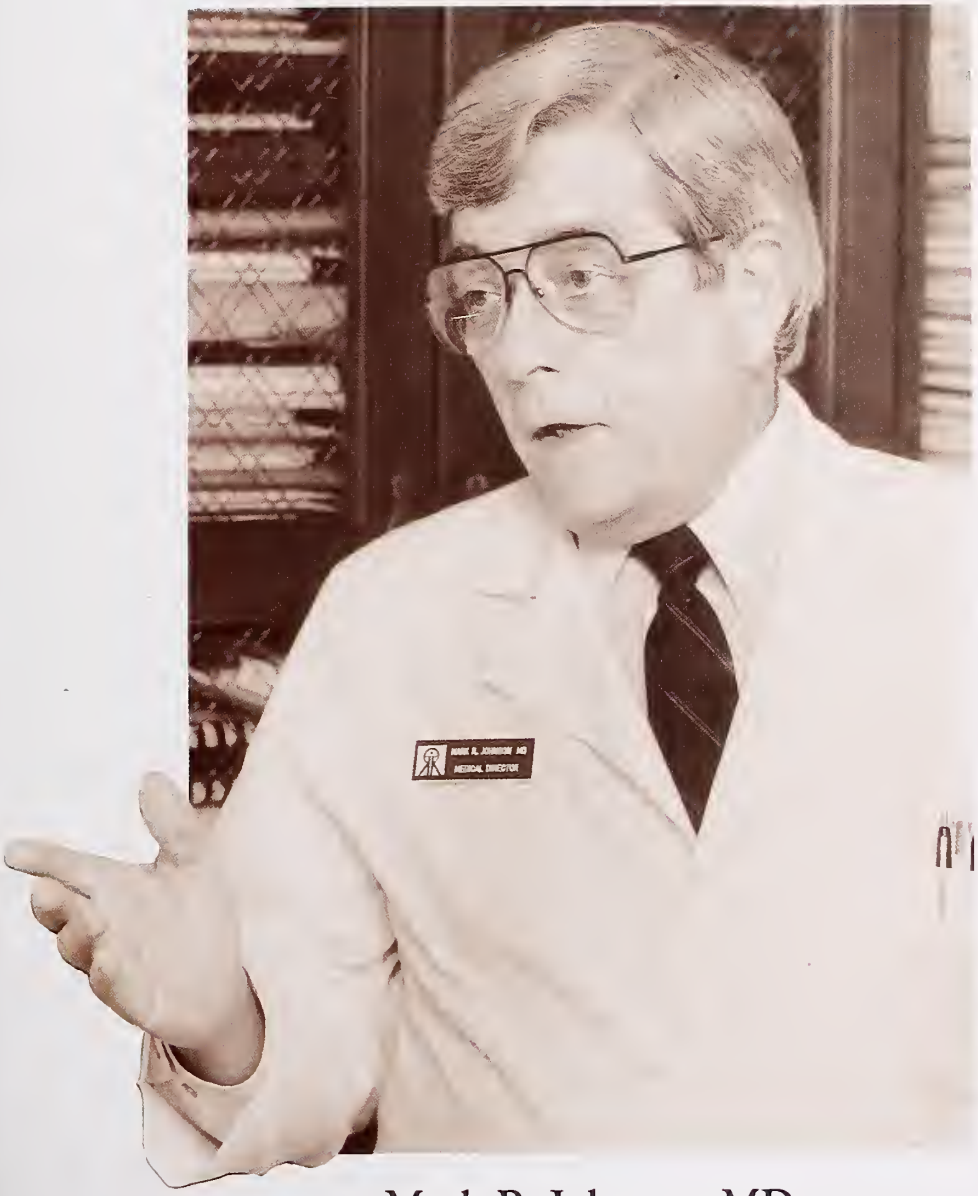

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RESIDENCY Harbor General Hospital—UCLA Medical Center.

HOSPITAL AFFILIATIONS St. Luke Hospital; Huntington Memorial Hospital, Pasadena, California; Traumatologist, Arcadia Methodist Hospital, Arcadia, California.

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AXID®

nizatidine

Enhances compliance and convenience

Patients appreciate Axid, 300 mg, in the Convenience Pak

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Lilly

Eli Lilly and Company
Indianapolis, Indiana
46285

1 Data on file, Lilly Research Laboratories

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AXID®

nizatidine capsules

Brief Summary

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Axid is indicated for maintenance therapy for duodenal ulcer patients at a reduced dosage of 150 mg h.s. after healing of an active duodenal ulcer. The consequences of continuous therapy with Axid for longer than one year are not known.

Contraindication: Axid is contraindicated in patients with known hypersensitivity to the drug and should be used with caution in patients with hypersensitivity to other H_2-receptor antagonists.

Precautions: *General* — 1. Symptomatic response to nizatidine therapy does not preclude the presence of gastric malignancy.

2. Because nizatidine is excreted primarily by the kidney, dosage should be reduced in patients with moderate to severe renal insufficiency.

3. Pharmacokinetic studies in patients with hepatorenal syndrome have not been done. Part of the dose of nizatidine is metabolized in the liver. In patients with normal renal function and uncomplicated hepatic dysfunction, the disposition of nizatidine is similar to that in normal subjects.

Laboratory Tests — False-positive tests for urobilinogen with Multistix® may occur during therapy with nizatidine.

Drug Interactions — No interactions have been observed between Axid and theophylline, chlordiazepoxide, lorazepam, lidocaine, phenytoin, and warfarin. Axid does not inhibit the cytochrome P-450-linked drug-metabolizing enzyme system; therefore, drug interactions mediated by inhibition of hepatic metabolism are not expected to occur. In patients given very high doses (3,900 mg) of aspirin daily, increases in serum salicylate levels were seen when nizatidine, 150 mg b.i.d., was administered concurrently.

Carcinogenesis, Mutagenesis, Impairment of Fertility — A two-year oral carcinogenicity study in rats with doses as high as 500 mg/kg/day (about 80 times the recommended daily therapeutic dose) showed no evidence of a carcinogenic effect. There was a dose-related increase in the density of enterochromaffin-like (ECL) cells in the gastric oxyntic mucosa. In a two-year study in mice, there was no evidence of a carcinogenic effect in male mice, although hyperplastic nodules of the liver were increased in the high-dose males as compared with placebo. Female mice given the high dose of Axid (2,000 mg/kg/day, about 330 times the human dose) showed marginally statistically significant increases in hepatic carcinoma and hepatic nodular hyperplasia with no numerical increase seen in any of the other dose groups. The rate of hepatic carcinoma in the high-dose animals was within the historical control limits seen for the strain of mice used. The female mice were given a dose larger than the maximum tolerated dose, as indicated by excessive (30%) weight decrement as compared with concurrent controls and evidence of mild liver injury (transaminase elevations). The occurrence of a marginal finding at high dose only in animals given an excessive and somewhat hepatotoxic dose, with no evidence of a carcinogenic effect in rats, male mice, and female mice (given up to 360 mg/kg/day, about 60 times the human dose), and a negative mutagenicity battery are not considered evidence of a carcinogenic potential for Axid.

Axid was not mutagenic in a battery of tests performed to evaluate its potential genetic toxicity, including bacterial mutation tests, unscheduled DNA synthesis, sister chromatid exchange, mouse lymphoma assay, chromosome aberration tests, and a micronucleus test.

In a two-generation, perinatal and postnatal fertility study in rats, doses of nizatidine up to 650 mg/kg/day produced no adverse effects on the reproductive performance of parental animals or their progeny.

Pregnancy — Teratogenic Effects — Pregnancy Category C — Oral reproduction studies in rats at doses up to 300 times the human dose and in Dutch Belted rabbits at doses up to 55 times the human dose revealed no evidence of impaired fertility or teratogenic effect, but, at a dose equivalent to 300 times the human dose, treated rabbits had abortions, decreased number of live fetuses, and depressed fetal weights. On intravenous administration to pregnant New Zealand White rabbits, nizatidine at 20 mg/kg produced cardiac enlargement, coarctation of the aortic arch, and cutaneous edema in one fetus and at 50 mg/kg it produced ventricular anomaly, distended abdomen, spina bifida, hydrocephaly, and enlarged heart in one fetus. There are, however, no adequate and well-controlled studies in pregnant women. It is also not known whether nizatidine can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. Nizatidine should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers — Studies conducted in lactating women have shown that <0.1% of the administered oral dose of nizatidine is secreted in human milk in proportion to plasma concentrations. Caution should be exercised when administering nizatidine to a nursing mother.

Pediatric Use — Safety and effectiveness in children have not been established.

Use in Elderly Patients — Ulcer healing rates in elderly patients are similar to those in younger age groups. The incidence rates of adverse events and laboratory test abnormalities are also similar to those seen in other age groups. Age alone may not be an important factor in the disposition of nizatidine. Elderly patients may have reduced renal function.

Adverse Reactions: Clinical trials of nizatidine included almost 5,000 patients given nizatidine in studies of varying durations. Domestic placebo-controlled trials included over 1,900 patients given nizatidine and over 1,300 given placebo. Among reported adverse events in the domestic placebo-controlled trials, sweating (1% vs 0.2%), urticaria (0.5% vs < 0.01%), and somnolence (2.4% vs 1.3%) were significantly more common in the nizatidine group. A variety of less common events was also reported; it was not possible to determine whether these were caused by nizatidine.

Hepatic — Hepatocellular injury, evidenced by elevated liver enzyme tests (SGOT [AST], SGPT [ALT], or alkaline phosphatase), occurred in some patients and was possibly or probably related to nizatidine. In some cases, there was marked elevation of SGOT, SGPT enzymes (greater than 500 IU/L) and, in a single instance, SGPT was greater than 2,000 IU/L. The overall rate of occurrences of elevated liver enzymes and elevations to three times the upper limit of normal, however, did not significantly differ from the rate of liver enzyme abnormalities in placebo-treated patients. All abnormalities were reversible after discontinuation of Axid.

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Endocrine — Clinical pharmacology studies and controlled clinical trials showed no evidence of antiandrogenic activity due to Axid. Impotence and decreased libido were reported with equal frequency by patients who received Axid and by those given placebo. Rare reports of gynecomastia occurred.

Hematologic — Fatal thrombocytopenia was reported in a patient who was treated with Axid and another H_2-receptor antagonist. On previous occasions, this patient had experienced thrombocytopenia while taking other drugs. Rare cases of thrombocytopenic purpura have been reported.

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Hypersensitivity — As with other H_2-receptor antagonists, rare cases of anaphylaxis following administration of nizatidine have been reported. Because cross-sensitivity in this class of compounds has been observed, H_2-receptor antagonists should not be administered to individuals with a history of previous hypersensitivity to these agents. Rare episodes of hypersensitivity reactions (eg, bronchospasm, laryngeal edema, rash, and eosinophilia) have been reported.

Other — Hypercalcemia unassociated with gout or nephrolithiasis was reported. Eosinophilia, fever, and nausea related to nizatidine administration have been reported.

Overdosage: Overdoses of Axid have been reported rarely. The following is provided to serve as a guide should such an overdose be encountered.

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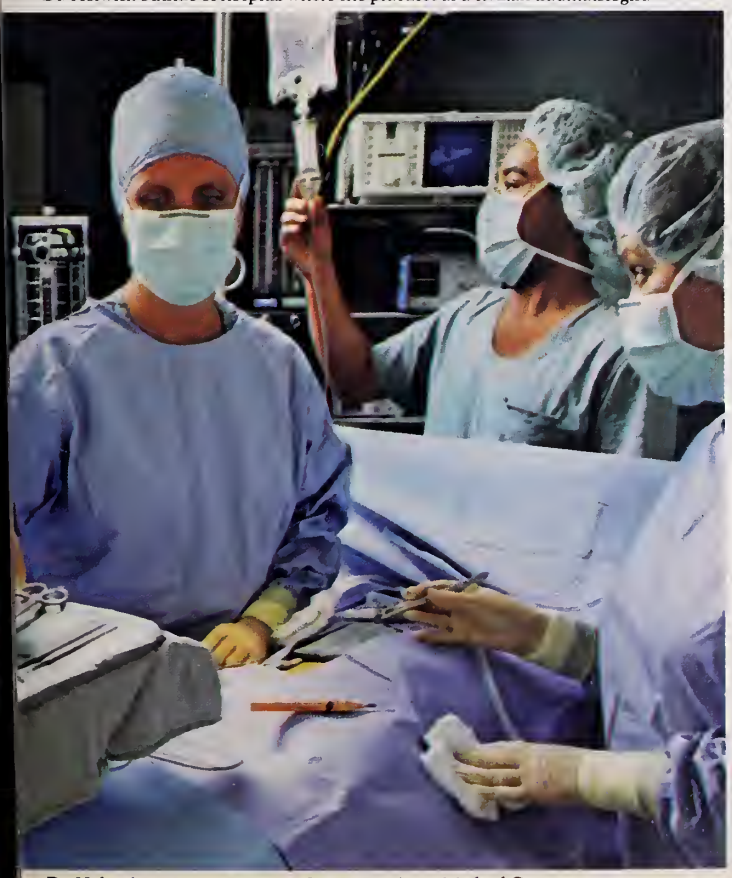
Treatment — To obtain up-to-date information about the treatment of overdose, a good resource is your certified regional Poison Control Center. Telephone numbers of certified poison control centers are listed in the *Physicians' Desk Reference (PDR)*. In managing overdosage, consider the possibility of multiple drug overdoses, interaction among drugs, and unusual drug kinetics in your patient.

If overdosage occurs, use of activated charcoal, emesis, or lavage should be considered along with clinical monitoring and supportive therapy. Renal dialysis for four to six hours increased plasma clearance.

PV 2096 AMP [013089]

Additional information available to the profession on request.

Dr. Holwick outside of hospital where she practices as a civilian traumatologist.



Dr. Holwick in operating room at Letterman Army Medical Center.

JANN L. HOLWICK, M.D.

General and Trauma Surgeon.
Captain, U.S. Army Reserve.

EDUCATION University of Southern California, B.S.; University of California School of Medicine.

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Additional information available to the profession on request.

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JOURNAL

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JUNE 1989 VOL. 82, NO. 6

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ABOUT THE COVER

Mark R. Johnson, MD, is now the JOURNAL's editor emeritus. A special tribute begins on page 269. Photo courtesy OUHSC photography. Photographer: Jim Thomas. Art Direction by Graphic Art Center, Oklahoma City.

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The most potent analgesic you can phone in—daytime, nighttime, weekends.

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Please see adjacent page for brief summary of prescribing information.

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vicodin®

(hydrocodone bitartrate 5 mg [Warning: May be habit forming] and acetaminophen 500 mg)

vicodin ES®

hydrocodone bitartrate 7.5 mg [Warning: May be habit forming] and acetaminophen 750 mg)

INDICATIONS AND USAGE: For the relief of moderate to moderately severe pain.

CONTRAINDICATIONS: Hypersensitivity to acetaminophen or hydrocodone.

WARNINGS:

Allergic-Type Reactions: VICODIN/VICODIN ES Tablets contain sodium metabisulfite, a sulfite that may cause allergic-type reactions including anaphylactic symptoms and life-threatening or less severe asthmatic episodes in certain susceptible people.

Respiratory Depression: At high doses or in sensitive patients, hydrocodone may produce dose-related respiratory depression.

Head Injury and Increased Intracranial Pressure: The respiratory depressant effects of narcotics and their capacity to elevate cerebrospinal fluid pressure may be markedly exaggerated in the presence of head injury, other intracranial lesions or a preexisting increase in intracranial pressure. Furthermore, narcotics produce adverse reactions which may obscure the clinical course of patients with head injuries.

Acute Abdominal Conditions: The administration of narcotics may obscure the diagnosis or clinical course of patients with acute abdominal conditions.

PRECAUTIONS:

Special Risk Patients: VICODIN/VICODIN ES Tablets should be used with caution in elderly or debilitated patients and those with severe impairment of hepatic or renal function, hypothyroidism, Addison's disease, prostatic hypertrophy or urethral stricture.

Cough Reflex: Hydrocodone suppresses the cough reflex, as with all narcotics, caution should be exercised when VICODIN/VICODIN ES Tablets are used postoperatively and in patients with pulmonary disease.

Drug Interactions: Patients receiving other narcotic analgesics, antipsychotics, antianxiety agents, or other CNS depressants (including alcohol) concomitantly with VICODIN/VICODIN ES Tablets may exhibit an additive CNS depression. The use of MAO inhibitors or tricyclic antidepressants with hydrocodone preparations may increase the effect of either the antidepressant or hydrocodone. The concurrent use of anticholinergics with hydrocodone may produce paralytic ileus.

Usage in Pregnancy:

Teratogenic Effects: Pregnancy Category C. Hydrocodone has been shown to be teratogenic in hamsters when given in doses 700 times the human dose. There are no adequate and well-controlled studies in pregnant women. VICODIN/ VICODIN ES Tablets should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nonteratogenic effects: Babies born to mothers who have been taking opioids regularly prior to delivery will be physically dependent. The withdrawal signs include irritability and excessive crying, tremors, hyperactive reflexes, increased respiratory rate, increased stools, sneezing, yawning, vomiting, and fever.

Labor and Delivery: Administration of VICODIN/VICODIN ES Tablets to the mother shortly before delivery may result in some degree of respiratory depression in the newborn, especially if higher doses are used.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk and because of the potential for serious adverse reactions in nursing infants from VICODIN/VICODIN ES Tablets, a decision should be made whether to discontinue nursing or to discontinue the drug, taking into account the importance of the drug to the mother.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS:

The most frequently observed adverse reactions include light-headedness, dizziness, sedation, nausea and vomiting. These effects seem to be more prominent in ambulatory than in nonambulatory patients and some of these adverse reactions may be alleviated if the patient lies down. Other adverse reactions include:

Central Nervous System: Drowsiness, mental clouding, lethargy, impairment of mental and physical performance, anxiety, fear, dysphoria, psychic dependence and mood changes.

Gastrointestinal System: The antiemetic phenothiazines are useful in suppressing the nausea and vomiting which may occur (see above); however, some phenothiazine derivatives seem to be antianalgesic and to increase the amount of narcotic required to produce pain relief, while other phenothiazines reduce the amount of narcotic required to produce a given level of analgesia. Prolonged administration of VICODIN/VICODIN ES Tablets may produce constipation.

Genitourinary System: Ureteral spasm, spasm of vesical sphincters and urinary retention have been reported.

Respiratory Depression: Hydrocodone bitartrate may produce dose-related respiratory depression by acting directly on the brain stem respiratory center. Hydrocodone also affects the center that controls respiratory rhythm, and may produce irregular and periodic breathing. If significant respiratory depression occurs, it may be antagonized by the use of naloxone hydrochloride. Apply other supportive measures when indicated.

DRUG ABUSE AND DEPENDENCE:

VICODIN/VICODIN ES Tablets are subject to the Federal Controlled Substance Act (Schedule III). Psychic dependence, physical dependence, and tolerance may develop upon repeated administration of narcotics; therefore, VICODIN/ VICODIN ES Tablets should be prescribed and administered with caution.

OVERDOSAGE:

Acetaminophen Signs and Symptoms: In acute acetaminophen overdosage, dose-dependent, potentially fatal hepatic necrosis is the most serious adverse effect. Renal tubular necrosis, hypoglycemic coma, and thrombocytopenia may also occur. Early symptoms following a potentially hepatotoxic overdose may include: nausea, vomiting, diaphoresis and general malaise. Clinical and laboratory evidence of hepatic toxicity may not be apparent until 48 to 72 hours post-ingestion.

Hydrocodone Signs and Symptoms: Serious overdose with hydrocodone is characterized by respiratory depression (a decrease in respiratory rate and/or tidal volume, Cheyne-Stokes respiration, (cyanosis), extreme somnolence progressing to stupor or coma, skeletal muscle flaccidity, cold and clammy skin, and sometimes bradycardia and hypotension. In severe overdosage, apnea, circulatory collapse, cardiac arrest and death may occur.

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De Mens Sana

Logical thought is said to be the rarest form of neurological activity that the human brain ever undertakes.

Aware of that rarity, we note with regret that Mark R. Johnson, MD, has resigned as editor-in-chief of the JOURNAL. Dr Johnson's editorials are always woven with the threads of human warmth and sympathy, but their constant outstanding feature has been the provocation of logical reasoning in the reader. His rare talent to limn a thought with words that induce logic in another human mind has been given to Oklahoma physicians for twenty years, and we are grateful for the gift. We shall miss his illuminating essays.

While practicing exemplary medicine, Dr Johnson worked effectively to improve the JOURNAL, and the character and presentation of the material attests to his skill. During his tenure, he has become one of the most respected editors in medical journalism. The medical knowledge and writing talent of Dr Johnson has been coupled with the polished professionalism of Managing Editor Susan Records to produce a JOURNAL that has repeatedly won national recognition. We offer our congratulations and our thanks to them.

A medical journal that is distributed to members of a medical association as a benefit of membership may have several missions. Dr Johnson has developed a journal that accomplishes several goals: Association activities are published and recorded in a style that transcends a "minutes of the meeting" form. Physicians and scientists writing scientific articles of interest to Oklahoma physicians have a respected Oklahoma forum available. Trenchant commentary on many topics of direct interest to Oklahoma physicians' activities on the state and national scene is interesting to our members, and is available in our own publication. Auxiliary actions and accomplishments are frequent and significant and through the JOURNAL can be reported to all members.

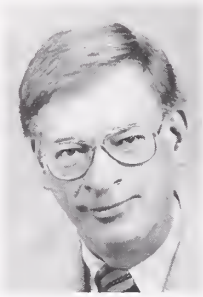
Dr Johnson has achieved these goals for the association's JOURNAL in a way that every member admires, and a resounding "Well Done!" is in order.

We now wish for Dr Johnson peace and fulfillment in his new plane of activity. He will always have our gratitude for what he has done for the JOURNAL.

We hope to keep the JOURNAL in a state that MRJ will approve. We wish his pen were inheritable.

Ray V. McIntyre, M.D.

Why Belong to the AMA?



Why do we continue to belong to the American Medical Association (AMA), and why does Oklahoma continue to be a unified state? These are two questions that I continue to hear. This month is the time for the annual meeting of the AMA House of Delegates in Chicago, and the questions come into focus more clearly. This is certainly a time in the history of our profession that we need to be united and well represented in the legislative arena as a profession. Many decisions are being made that will impact heavily on the way we practice in the next couple of years; we need to be at the table when the decisions are being made and not just reacting to them afterward.

Using a disagreement with a policy of the AMA as a rationalization for failing to support and participate in the only national organization that represents the entire profession is not a valid one, in my opinion. This is just a convenient excuse for shunning a responsibility to our colleagues and to our patients.

The current AMA *Reference Guide to Policy and Official Statements* contains nearly seventy pages of one-paragraph summaries of AMA policy positions. It is highly unlikely that any one individual would agree with all of these policies. We should all work together in attempting to develop policy and make changes when we feel changes need to be made. We should do this together and consider the views of all, including those from different regions of the country, rural, urban, various specialties and subspecialties, etc. This is what the House of Delegates attempts to accomplish by providing a forum for discussion of all pertinent issues in reference committees and on the floor of the House with a workable consensus opinion and policy developing.

There are more benefits that come to the member physician, however, other than having the representation of a national group. These benefits range from scientific and socioeconomic information to continuing education material to practice administration aid to career transition services to personal financial services to patient information.

Particularly impressive to me are the activities of the AMA in the area of quality of care. The AMA's involvement in programs aimed at assuring high-quality care is long-standing and broad. Historically the AMA has based quality efforts on the use of scientific methods to improve care.

All of these activities of the organization do not occur without time and energy. They require the expenditure of large amounts of both human and financial resources, and thus the support of physicians across the country is essential. All of us have a stake in the future of medicine. Membership and active participation in the affairs of organized medicine are an obligation of each physician. This obligation is not just for the benefits to the profession itself, but more importantly, for the well-being of the health care system, so that it may continue to be one of the finest systems in the world.

Clinical Experience with HIV-infected Patients at the University of Oklahoma Health Sciences Center

Joel A. Trotter, MD; Lisa A. Haglund, MD; Ronald A. Greenfield, MD; Leonard N. Slater, MD; Sandra L. Harris, MD; Harold G. Muchmore, MD; Douglas P. Fine, MD

Two hundred seventy-two patients infected with human immunodeficiency virus (HIV) have received care from the members of the adult infectious disease section at the University of Oklahoma Health Sciences Center. The majority of these patients met the diagnostic criteria for acquired immunodeficiency syndrome. This group of patients was characterized by relatively few parenteral drug abusers, a high incidence of disseminated histoplasmosis, and an unexpectedly low frequency of toxoplasmosis. The prevalence of risk behaviors and endemic disease may be responsible for these particular case distributions.

Since the initial decription in 1981 of the acquired immunodeficiency syndrome (AIDS), efforts have been made to assess the impact of the epidemic in Oklahoma and identify characteristics of patients contributing to the epidemic here. It is important to understand whether AIDS in Oklahoma represents a smaller-scale version of AIDS in New York City or San Francisco or whether there are important differences in the human immunodeficiency virus (HIV)-infected patient population here.

We have provided inpatient and outpatient care to a large group of HIV-infected persons in Oklahoma (272) patients. A substantial minority of these patients moved to Oklahoma after diagnosis, frequently to rejoin supportive families, but the majority of these patients were living in Oklahoma at the time of diagnosis. These patients were self- or physician-referred to our center from a large area of the state.

The purpose of this study, describing the patient population and disease manifestations encountered, is to assess those factors which could contribute to the local manifestations of HIV infection. This may also allow some estimation of the magnitude of the epidemic and the impact on the health care system.

Methods

All patients with HIV infection seen by the Infectious Diseases Section of the Department of Medicine of the University of Oklahoma Health Sciences Center (OUHSC) at any point after positive serology was obtained are included in this study. These patients were evaluated at Oklahoma Memorial Hospital or Veterans' Administration Medical Center in Oklahoma City. No pediatric patients and few hemophiliac patients are included because those patients are primarily followed by other groups at our center. Since 1986, an individual case record form has been generated for each new HIV-infected patient, and updated at patient visits. The case record form includes data on demographics, risk factors, complications, and survival. Patient records are identified by numeric code to assure confidentiality. Cases seen earlier were collected by retrospective review. To ensure completeness of case records, hospital and clinic discharge diagnoses are reviewed periodically and section members were periodically polled.

Two hundred seventy-two patients have been

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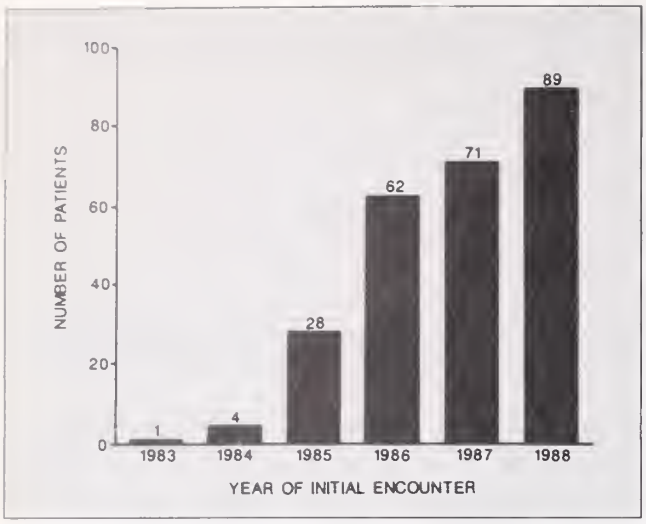

Figure 1. Numbers of new patients encountered with HIV infection at OUHSC.

identified. Positive serology for antibody to HIV by enzyme-linked immunosorbent assay confirmed by Western blot test were reported in all patients.

Patients were considered to have AIDS if they met the 1987 revised Centers for Disease Control (CDC) case definition for AIDS.[1] Records of patients seen before publication of this updated definition were reviewed, and the new definition was applied retrospectively. Patients without diagnosis of AIDS were considered to be symptomatic from HIV infection if they had one or more of the following: chronic lymphadenopathy at two or more extrainguinal sites for three months; unintentional weight loss of at least 10% of body weight or 15 pounds; unexplained fever or night sweats for three months; chronic diarrhea of unexplained etiology for three months; oral candidiasis; cutaneous herpes zoster infection (shingles); oral hairy leukoplakia; idiopathic thrombocytopenic purpura; or the neurologic complications of memory loss, peripheral neuropathy, or paresis. Acute HIV infection syndrome (with subsequent resolution) was not considered to represent symptomatic HIV infection for the purposes of this study. All of the patients considered to be symptomatic by the definition above would be classified as group III or group IV in the CDC classification system reported in 1986.[2]

A survival curve was constructed using the method of Kaplan and Meier with standard life table analysis.[3] Patients who were lost to follow-up were not included in survival calculations.

Results

Of the 272 patients in this series, 138 (51%) met the CDC case definition for the diagnosis of AIDS by the close of the study period (December 31, 1988).

Table 1. Patient Demographics

Age:	mean = 33 years (youngest 19, oldest 65)	
Sex:	male	260 (96%)
	female	12 (4%)
Race:	white	219 (83%)
	black	37 (14%)
	Native American	4 (2%)
	Hispanic	3 (1%)
	not recorded	9
Marital Status:		
	married	30 (11%)
	divorced	37 (14%)
	single	203 (75%)
	not recorded	2

Seventy-three patients (27%) were symptomatic but did not meet the diagnostic criteria for AIDS. Sixty-one patients (22%) were asymptomatic. Because the term *AIDS-related complex (ARC)* is poorly defined in the current literature, it will be avoided in this review.

The number of new patients presenting with HIV infection has increased yearly at our center from the first case in 1983 until 1988. In 1988, 89 new cases were evaluated (Fig 1). The number of new cases we encounter yearly may be reaching a plateau after a major increase in 1986, but further observation is required to be confident in this assessment.

Demographic data are shown in Table 1. The mean age of the 272 HIV-infected patients was 33 years. Ninety-six percent of the patients were male, reflecting a predominance of male homosexuals. Eighty-three percent were Caucasian. Seventy-five percent were single, and twenty-five percent were married or divorced.

The risk factors for HIV infection among the

Table 2. Risk Factors Among All HIV-Infected Patients in This Series and Comparison to US National Data

	OUHSC	(N=272)	US*
Homosexual or bisexual male	226	(83%)	(68%)
Parenteral drug abuser but *not* homosexual or bisexual male	16	(6%)	(20%)
Blood product recipient with none of the risk factors above	15	(6%)	(4%)
Heterosexual partner of HIV-infected person	6**	(2%)	(4%)
No risk factor	9	(3%)	(3%)
Health care worker	0		
Transplant recipient	0		

*Statistics from the CDC[4]
**Five of these six patients were female

Table 3. Conditions Possibly Associated with HIV Infection Among Patients Not Meeting Criteria for AIDS Diagnosis*

Lymphadenopathy (≥ 2 extrainguinal sites for 3 months)	31 (23%)
Oral candidiasis	27 (20%)
Memory loss	13 (10%)
Peripheral neuropathy	10 (7%)
Fever/Night sweats (continuous or intermittent for 3 months)	9 (7%)
Diarrhea (continuous or intermittent for 3 months)	8 (6%)
Weight loss (10% of body weight or 15 pounds)	8 (6%)
Herpes zoster	5 (4%)
Paresis	5 (4%)
Idiopathic thrombocytopenic purpura	3 (2%)
Other non-AIDS-defining opportunistic infections	2 (2%)
Oral hairy leukoplakia	1 (1%)

*Any individual may have contributed to more than one of these categories.

Table 4. Frequency of Occurrence of AIDS-Defining Conditions in This Series and Representative Comparisons from Literature Review

	OUHSC	(N = 138)	Other Cohorts[5-16]
Pneumocystis pneumonia	86	(62%)	(63-85%)
Esophageal candidiasis	30	(22%)	(14-21%)
Kaposi's sarcoma	24	(17%)	(16-40%)
Chronic mucocutaneous herpes simplex virus infection	22	(16%)	(4-29%)
HIV wasting syndrome	22	(16%)	
Disseminated atypical mycobacterioses	21	(15%)	(3-28%)
Invasive cytomegalovirus infection	12	(9%)	(7-40%)
Cryptococcal meningitis	11	(8%)	(5-15%)
HIV encephalopathy	10	(7%)	
Histoplasmosis	7	(5%)	(0-3%)
Cryptosporidiosis	7	(5%)	(5-18%)
Primary central nervous system lymphoma	4	(3%)	(<5%)
Progressive multifocal leukoencephalopathy	3	(2%)	(<5%)
Central nervous system toxoplasmosis	3	(2%)	(5-40%)
Bronchial candidiasis	2	(2%)	(<5%)
Disseminated herpes simplex virus infection	2	(2%)	(<5%)
Non-Hodgkin's lymphoma	2	(2%)	(<5%)
Disseminated *M tuberculosis* infection	1	(1%)	(<5%)
Isosporiasis, coccidioidomycosis, salmonellosis	0		(<5%)

entire group of HIV-positive patients are compared with national statistics from the CDC[4] in Table 2. Eighty-three percent of the patients in this series were homosexual or bisexual men, which compares with 68% nationally. Only 6% of the patients were parenteral drug abusers and not homosexual or bisexual males, which compares with 20% nationally. Fifteen percent of the homosexual or bisexual males were also parenteral drug abusers. Three female parenteral drug abusers were also prostitutes. Six percent of the total number of HIV-infected patients were blood product recipients without other risk factors. Two percent of the patients were heterosexual partners of HIV-infected persons as their only risk factor. Five of these 6 patients were women. There were no health care workers or transplant recipients without other risk factors. We were unable to identify any risk factor in 9 patients (3%), which is quite comparable to national data.

For the 134 HIV-infected patients without a diagnosis of AIDS, we tabulated the occurrence of a number of conditions that have been pathogenetically linked to HIV infection but are not diagnostic of AIDS, as shown in Table 3. The majority of the patients without AIDS (54%) had at least one symptom or sign possibly related to HIV infection. Chronic lymphadenopathy was most common, followed by oral candidiasis and various neurologic complications.

AIDS-defining conditions, occurring at any time in the course of AIDS, are listed in Table 4, in order of decreasing frequency, and compared with statistics from 12 major reviews of AIDS complications in other cohorts.[5-16] No comparison statistics are available for wasting syndrome and HIV encephalopathy since these conditions were added to the CDC case definition fairly recently.

Pneumocystis pneumonia was the most commonly encountered manifestation of AIDS, in both this and other series, occurring in 62% of our AIDS patients. Furthermore, recurrences were common (mean = 0.5 per patient, range 0-4). Pneumocystosis was followed in frequency by esophageal candidiasis, Kaposi's sarcoma, chronic mucocutaneous herpes simplex virus infection, and wasting syndrome. The percentage of our patients developing each AIDS-defining condition was generally similar to percentages from other cohorts, with several exceptions noted below.

Disseminated histoplasmosis was diagnosed in 5% of our AIDS patients, which is more than the percentage reported in most major series but less than that reported from two small groups of AIDS patients from highly endemic areas.[17,18] This is

Table 5. Drug Therapies Administered to Entire HIV-Infected Group

Nonabsorbable antifungal	107 (39%)
Antibacterial	104 (38%)
Antipneumocystis	85 (31%)
Zidovudine (azidothymidine, AZT)	71 (26%)
Acyclovir	52 (19%)
Ketoconazole	36 (13%)
Antituberculosis	22 (8%)
Amphotericin B	21 (8%)
Flucytosine	6 (2%)
Ganciclovir	5 (2%)
Other investigational	5 (2%)

Table 6. Survival by Category of HIV Infection

	Asymptomatic	Symptomatic (not AIDS)	AIDS
Know alive	33	53	52
Known dead	3	2	75
Lost to follow-up	25	18	11
Total	61 (22%)	73 (27%)	138 (51%)

consistent with the location of Oklahoma City on the western edge of the major endemic area for histoplasmosis.

Central nervous system (CNS) toxoplasmosis was found in only 3% of our AIDS patients. In the subgroup of AIDS patients whose initial AIDS diagnosis was made in Oklahoma, only 1 of 118 was found to have CNS toxoplasmosis. This is a far lower incidence than that reported in most major series. A recent large study from Miami, Florida, for example, reported a 37% incidence of toxoplasmosis among AIDS patients.[7]

The drug therapies administered to the entire group of HIV-infected patients are listed in Table 5. Nonabsorbable antifungal agents were most commonly administered, followed by antibacterials, antipneumocystis therapy, zidovudine (formerly known as azidothymidine, AZT), and acyclovir. Antipneumocystis therapy was most frequently begun in the form of intravenous trimethoprim-sulfamethoxazole, but 36% of patients receiving antipneumocystis therapy eventually required intravenous pentamidine. Pneumocystis prophylaxis is now most often being given as aerosolized pentamidine. Seventy-one percent of our patients currently receiving pneumocystis prophylaxis are receiving aerosolized pentamidine; trimethoprim-sulfamethoxazole and dapsone are being used less frequently because of actual or potential toxicities of these drugs.

Survival data, by category of HIV infection, are shown in Table 6. Of the 138 patients with AIDS, 52 are known to be alive, and 75 are known to have died as of December 31, 1988, when the study was concluded. Figure 2 shows the survival time, after AIDS diagnosis, for the 127 AIDS patients with known outcome. The 11 patients who were lost to follow-up were not included in this analysis. Using this graph, a median survival of approximately 12 months is determined. This is comparable to median survivals from other centers. Our longest surviving patient was still alive 44 months after diagnosis of esophageal candidiasis.

Pneumocystis pneumonia is the most commonly identified cause of death among our AIDS patients. It was responsible for 26% of deaths and was followed in frequency by other pneumonias, encephalopathy or encephalitis, and bacterial sepsis.

Discussion

Analysis of data concerning any population must be interpreted with consideration of the potential for selection bias in that population. Our patients were referred from a large geographic area at varying points in their illness. It is generally accepted that asymptomatic patients with HIV infection far outnumber symptomatic ones. Our preponderance of symptomatic patients probably reflects selection bias, since patients may not be referred until they are symptomatic. However, careful scrutiny in recognition and recording of these symptoms may also have contributed to the increased proportion of symptomatic patients.

The overwhelming majority of HIV-infected persons at our center are homosexual or bisexual males. Very few of our patients are parenteral drug abusers with no history of homosexuality, as opposed to the circumstances reported from the northeastern US. It is possible there are fewer parenteral drug abusers per capita in Oklahoma, but other factors may also play a role in this observation.

There are a few noteworthy observations about the spectrum of complications of HIV infection in Oklahoma. The increased incidence of histoplasmosis reflects our location relative to the known histoplasmosis endemic area. Conversely, disseminated coccidiodomycosis was not encountered in our series as only a few of our patients came from the coccidiodomycosis endemic area.

Perhaps the most interesting finding was the very low incidence of toxoplasmosis (1 of 118 patients) in AIDS patients diagnosed in Oklahoma. This

compares with 5% to 40% in most other cohorts. Since central nervous system toxoplasmosis typically results in a dramatic and characteristic clinical syndrome, our infrequent diagnosis probably reflects geographic and sociologic variation in incidence rather than failure to suspect the diagnosis of toxoplasmosis. The low incidence of clinical toxoplasmosis may simply reflect the low prevalence of past toxoplasma exposure among our patients. To our knowledge, the seroprevalence of toxoplasmosis in our area has not been determined. Available estimates are based on surveys performed from 10 to 30 years ago.[19] Clearly, new determinations of seroprevalence from all areas of the country would be useful. Central nervous system toxoplasmosis is said to be the most common cause of cerebral mass lesions in AIDS patients.[7,9,19] However, this has not been true for our patients and may not be true for other patients in neighboring areas. We have encountered more patients with primary lymphoma of the central nervous system than with central nervous system toxoplasmosis.

The full magnitude of the AIDS epidemic in our state has not yet been determined. There are indications from our study, and from the Oklahoma State Department of Health, that new cases may be reaching a plateau.[4] However, caution must be used in interpreting declines in incidence since reporting of new cases may lag behind the actual incidence.

In any case, the financial burden is obviously huge. AIDS patients require frequent outpatient visits and may require frequent hospitalization. They are often taking many expensive medications, as our data demonstrate. Zidovudine alone has been administered to 26% of all of our HIV-infected patients at a cost of $600 to $1,000 per month.

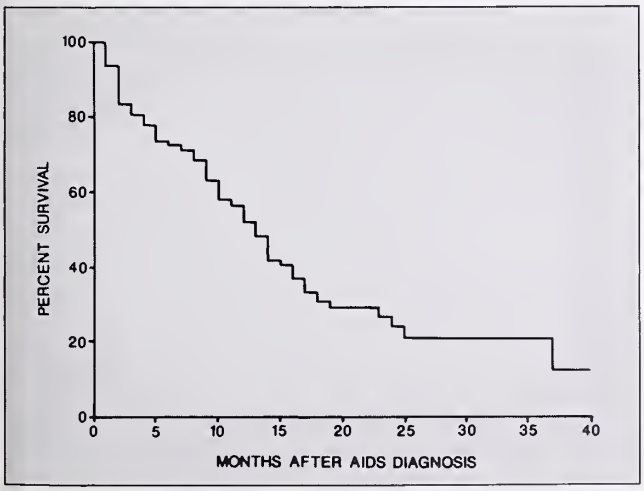

Figure 2. Survival analysis from diagnosis of AIDS for the 127 AIDS patients with known follow-up as of December 31, 1988.

Conclusion

In conclusion, HIV-infected patients at OUHSC are characterized by unusually low rates of parenteral drug abuse, a high incidence of histoplasmosis, and a strikingly low incidence of toxoplasmosis. Further study is indicated to determine the reason for the infrequent occurrence of toxoplasmosis in AIDS patients in this area. Continuing review of local experience with HIV-infected patients should further assist health care providers, planners, and administrators in the provision of medical care to HIV-infected patients in Oklahoma.

Acknowledgments

The authors gratefully acknowledge the assistance of the many individuals who provided care for these patients with us, the assistance of Val Schott and Gail Klein in reviewing discharge diagnoses, the assistance of Karen Kimbley in chart review and data processing, and the assistance of Linda Thai in manuscript preparation.

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The Return of Stereotaxic Surgery

C.J. Hash, MD; L.S. Orr, MD; I.M. Mitchell, LPN

Stereotaxic surgery, which declined with the advent of dopaminergic treatment of Parkinson's disease, has found new life and new uses with unknown limits.

Stereotaxic surgery was recognized as the most effective method of treating Parkinson's disease in the mid part of this century. When dopamine and its analogs became available for clinical use, this surgical method virtually disappeared except in a few isolated centers.

With the advent of brain imaging and clear visualization of lesions, the need for a reliable method of safely biopsying lesions was quickly recognized. Examination of tissue has remained the gold standard for diagnosis, despite the remarkable advances in computerized tomography (CT) and magnetic resonance imaging (MRI).

Modifications to existing stereotaxic frames and the development of new systems that could be used in the course of brain imaging allowed target selection from the images produced. This has revitalized the use of this surgical tool. The further addition of computers to some systems has introduced a degree of accuracy, simplicity, and availability previously only contemplated.

The moderate cost of some systems has made them available to essentially all physicians having need of them. Because of the ease with which lesions can be stereotaxically biopsied under local anesthesia, with extremely low morbidity, a description of the procedure and a brief presentation of results is worthwhile.

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Procedure

There are more than fifteen stereotaxic units in operation in the world today, each having its own set of advantages and failings. When we began to look at stereotaxic systems four years ago, the two that appeared the most versatile, and popular in the United States, were the Brown-Roberts-Wells and the Leksell.

The Leksell system basically places the target area in the center of the sphere and the instrument is always passed to the center of the sphere. It is simple, yet extremely accurate for deep midline structures. As the target deviates from the midline, however, the accuracy declines. In the days when thalamotomies were the major indication for stereotaxis, this was not a problem.

The mathematics of the Brown-Roberts-Wells (BRW) unit is a byproduct of the space program and is akin to positioning the space arm on the space shuttle. It is as accurate as the older Leksell system but retains its accuracy within a wider realm of space. Accuracy for cortical brain lesions equals that for brainstem procedures. The discussion which follows is based on the BRW system, but the procedure is similar for many other systems.

A base ring is attached to the patient's head by four pins which firmly seat against the patient's skull creating a "solid halo" upon which a hollow,

fenestrated cylinder is placed encircling the general area of interest. The cylinder has nine bars running from top to bottom that are seen in cross sections on the CT scan. All major scanners have the ability to display X-Y coordinates for any point on the study.

By obtaining the X-Y coordinates of the nine columns as they appear on the scan (all from the same image), three points can be plotted within the cylinder. This creates a series of parallel planes (remember from geometry that three points define a plane). That plane is raised or lowered to the appropriate level as identified by the site selected for lesioning or biopsy. The mathematics requires a computer, which is provided with the system (the system is equipped with two computers, in case of break-down). The patient is then taken to the operating room, freeing the CT scanner for other patients.

The coordinates are entered into the computer, and the appropriate angles and depth to the target are computed. An added advantage of this system is that an entry point anywhere on the head can be chosen and a proper course and depth to the target computed. The target data is tested on a phantom frame to provide an additional margin of safety.

The lesioning ring is attached to the base ring (halo), and a small drill hole is made in the skull in accord with the selected course to the lesion. The instrument is passed into the brain to the measured depth and the biopsy carried out. The procedure usually takes 30 minutes of operative time. If the intention is to make a lesion, 30 to 90 minutes may be required, depending upon the area targeted. We usually do a follow-up CT scan at the end of the procedure to ensure there are no "surprises" and to verify the site of biopsy or lesion created.

Summary of Stereotaxic Surgical Procedures

Biopsy	Correct Dx	Incorrect Dx
Primary brain tumor	11	1
Metastatic brain tumor	7	1
Abscess	2	0
Hematoma	1	0
AIDS	1	0
Functional	**Goal Achievement**	**Attempts**
Thalamotomy (Parkinson's disease)	3	4
Cingulotomy (fear and pain)	1	1

The patient is observed in the intensive care unit overnight and thereafter transferred to the floor or allowed to go home, as appropriate. The average length of stay for a patient who walks into the hospital for a biopsy is three days. For those with more severe neurologic disability, the length of stay varies. In no case of biopsy was the patient made worse by the procedure, or hospitalization prolonged, an important consideration not only for the patient but also the hospital in these days of cost containment and limited hospital reimbursement.

Those patients undergoing surgery to create a lesion as treatment (thalamotomy and cingulotomy) occasionally experience a transient worsening of symptoms, but to date have thereafter improved and returned to a more functional state than when they entered the hospital. Patients undergoing thalamotomy for debilitating tremor uncontrolled by other means are generally transferred to our rehabilitation center within three days following surgery. This is to aid in utilization and to allow us a period of time to observe them and ensure that the tremor does not recur.

Results

We have done 31 stereotaxic procedures in the past two years. Of these, 24 have been for biopsy (2 patients had two biopsies), 5 have been functional procedures (4 thalamotomies, 1 cingulotomy). Diagnostic biopsies were obtained from the cerebral hemispheres in 20 of 22 patients, and the brain stem (2) with no morbidity and no deaths, for a diagnostic yield of 93%. The lack of morbidity can be ascribed to the choice of approach to the tumor, avoiding as much as possible major vessels and the eloquent areas of the brain.

The two "missed" biopsies included the first case performed, in which the biopsy was probably too superficial. The second inaccurate biopsy was in a woman with a large thalamic tumor and 4 mm lesion in the hemisphere. The smaller lesion was biopsied first, avoiding the brain stem. The biopsy was nondiagnostic, and the larger lesion was subsequently biopsied for a diagnosis of metastatic ovarian carcinoma. Both of these situations appear to be preventable, and the last 13 biopsies have yielded diagnostic results. Two patients with AIDS have been biopsied. One was found to have toxoplasmosis (prior to the recommended empirical treatment) and the other was found to have metastatic adenocarcinoma (two lesions were biopsied).

The thalamotomies included two patients, one

bilateral and one repeat because of inadequate control of tremor. Both patients now function with minimal or no tremor, less rigidity than preoperatively, and have required lower doses of Sinemet, reducing the side effects of medication (hallucinations, on-off, etc). The cingulotomy was done for a woman dying of cancer, incapacitated by her anxiety and fear of death. This procedure allowed her to accept her disease process and to become intellectually functional until her death.

Utilizing a method described by others[1] we have recently used the stereotaxic unit on two occasions to guide a craniotomy to the exact location of a subcortical lesion located in the motor strip (not summarized in table). Both lesions were removed with the patient awake so as to ensure we were not producing paralysis. Without this method of attack there was a high chance the patient would have been damaged as there was no surface evidence of the lesions (both less than one centimeter in diameter). The first (cavernous hemangioma) was producing a seizure disorder and the second (metastatic adenocarcinoma), progressive weakness. Ultrasonic guidance might also have led us to the "correct" area, but the craniotomy flap would necessarily have had to be larger to allow for a greater margin of error.

Summary

A diagnostic accuracy rate of more than 90% is attainable by stereotaxic brain biopsy (this rate has been confirmed in other reports).[1-3] The procedure carries a low risk (when compared with the alternatives) and can be performed under local anesthesia in less than one hour.

It has been found that Sinemet and its analogs often become less effective with time, and/or patients become increasingly intolerant of their medications (on-off, hallucinations, etc) with the progression of disease. It has been recognized that the medical therapy for Parkinson's disease is only mildly effective in arresting the tremor and decreasing the rigidity, having its greatest effect in reducing the akinesia.[4,5] For those patients severely affected by tremor and rigidity, stereotaxic thalamotomy returns now as a viable alternative in their management.

It seems clear that stereotaxic surgery will become increasingly important and will command a greater part of the neurosurgeon's operative time. With "tissue implantation" possibly on the horizon, one can only guess what new uses will be discovered.

Addendum

Since submission of this article for publication, we have performed an additional 14 stereotaxic procedures. Both biopsies and lesioning for movement disorder were performed with no increased morbidity to the patients, and successful results were obtained in all.

Acknowledgments

The authors would like to thank Dr H.A. Shenkin for his review and suggestions.

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Image Guided Stereotaxic Surgery

David J. Gower, MD

Computerized tomographic (CT) scanning and magnetic resonance imaging (MRI) can demonstrate areas of abnormal tissue within the brain, sometimes smaller than can be safely found and biopsied by open surgery or free-hand needle techniques. Image guided stereotaxic surgery can accurately and reproducibly place a needle in the brain based upon data from high resolution images. Tissue biopsy, abscess or cyst drainage, placement of radioactive seeds, or removal of a parenchymal hematoma can be done with less patient morbidity and in-hospital time.

Patients presenting with deep brain lesions like that seen in Figure 1 present a dilemma for the neurosurgeon. A tissue diagnosis is indicated, but open techniques to obtain that tissue may damage the patient's neurological function. Stereotaxic surgery provides a method of biopsying deep lesions accurately with reduced patient morbidity.

Theory

Stereotaxic surgery involves creating a three-dimensional matrix in and around a patient's head and passing a small biopsy probe to a predesignated point within that matrix. Initially, stereotaxic targeting was based upon the position of the anterior and posterior commissure, as identified on an air pneumoencephalogram.[1] Targeting could then be planned based upon a stereotaxic atlas of coordinates of the human brain.

One major drawback of this methodology is that frequently the target point could not be adequately seen on the radiographs, and coordinates had to be estimated. With the advent of computerized tomographic (CT) scanning and, more recently, magnetic resonance imaging (MRI), accurate demonstrations of normal and abnormal intracranial anatomy could be obtained. Stereotaxic surgery subsequently has incorporated high resolution imaging into target coordinate acquisition.

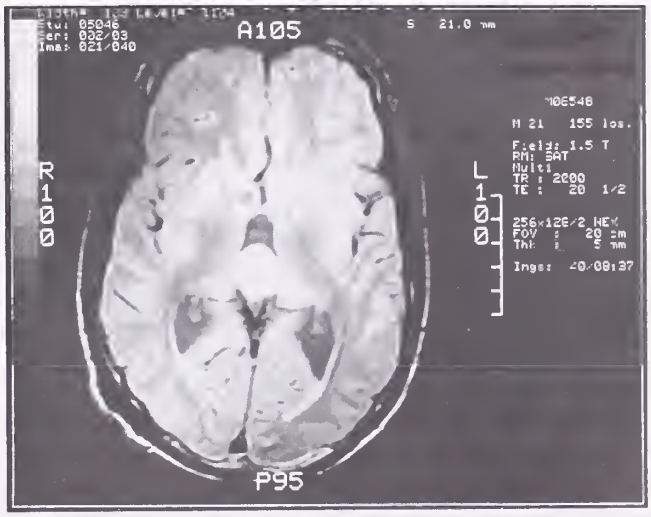

Figure 1. MRI scan of a recent patient at OU Health Sciences Center for biopsy. The lesion was a grade 1-2 astrocytoma.

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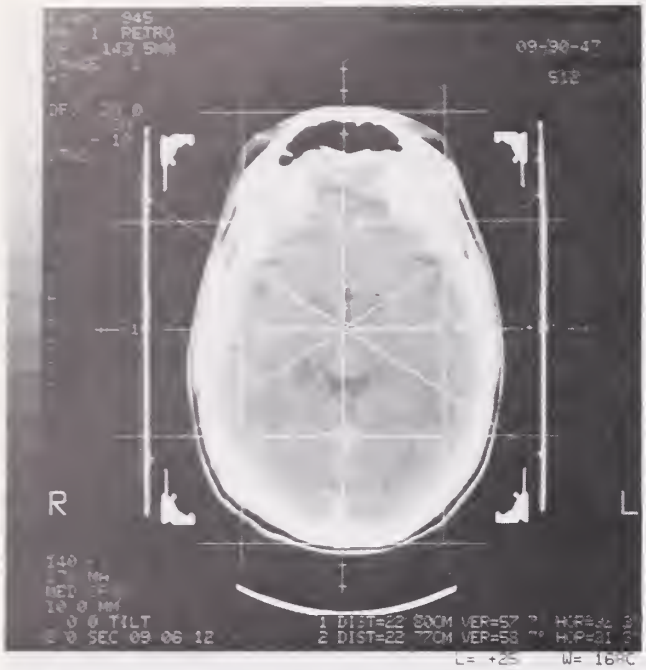

Figure 2. CT scan of a patient's head with the stereotaxic frame in place. X-coordinates are present along the lower (horizontal) bar of the frame. Y-coordinates are present along the vertical bar of the frame. The CT grid is aligned so that the x-y coordinates can be read directly from the scanner. The z-, or depth, coordinates may be read from the fiducial marks on the right or left.

Figure 2 demonstrates a CT scan of a patient's head within the Leksell frame, used at the University of Oklahoma Health Sciences Center (OUHSC). The x- and y-coordinates may be obtained directly from the monitor while the z-coordinate (or depth) is obtained from the side fiducials or radio-opaque spots.

Application

The stereotaxic biopsy begins early in the morning, with the patient arriving at outpatient surgery. In the patient's room, the stereotaxic localizer frame is firmly attached to the patient's head. This involves shaving posteriorly over the mastoid region on both sides, positioning of the frame, and then attaching the frame with the help of local anesthetic. A small punch biopsy is done in the skin using the outer sleeve of a skull drill, and the drill is advanced 1 to 2 millimeters into the skull.

These metallic drills are then removed and replaced with carbon fiber pins, which produce minimal amounts of CT scatter and hold the frame firmly to the head. This method of fixation, although more involved than simple skill pins, provides a very rigid fixation system that will allow the stereotaxic

Figure 3. Stereotaxic frame completely assembled with the arc in place. The center of the arc defines a sphere with the center at the predetermined target point. The entry point can be adjusted to anywhere over the surface of the head that is deemed safe by the surgeon.

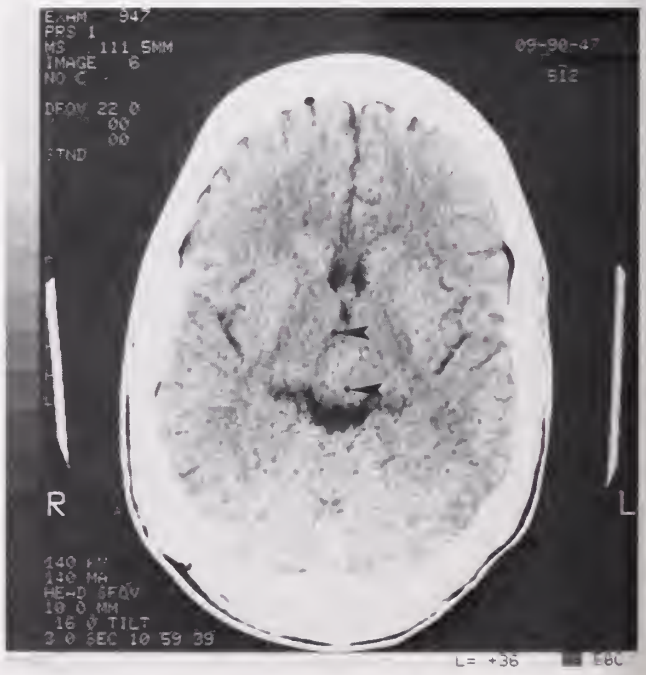

Figure 4. Postoperative scan demonstrating small air bubbles at the site of the biopsy (arrows).

frame to be attached to the patient's head in exactly the same position, should a later biopsy be required.

Following this, the patient is transported by wheelchair to the CT scanner, where a CT scan is carried out, with infusion dye if necessary, to visualize the target points. Coordinates are obtained from the CT scanner terminal, and prints of the targeting procedures are made. If multiple biopsies are indicated, coordinates may also be obtained from the printed films that are taken with the patient to the OR.

The patient is transported to the operating room, again with the stereotaxic frame in place. Under local stand-by anesthesia, a small area of hair is then shaved and the skin prepped at the entry point in the right frontal area. The frame is then programmed with the stereotaxic coordinates obtained from the CT scanner, and double checks are made to ensure that the system is accurately targeted. A burr hole is placed, dura cauterized, and a small area of cortical surface identified. After this, the arc on the stereotaxic frame is attached, as can be seen in Figure 3, and the needle passed into the target. In our experience, with biopsies done in the CT scanner, the probe has been within one millimeter or less of the predicted target.

The patient's wounds are then closed, the frame removed from the patient's head, and the small dressings applied. The patient is transported back to the CT scanner to ensure that no bleeding has occurred in the operative site. Frequently a small bubble of air is seen at the biopsy site as seen in Figure 4. The patient is watched overnight in the intensive care unit. The majority of patients are then able to be discharged the following morning. Stitches are removed in 5 to 7 days.

Table 1. Indications for Stereotaxic Biopsy

Brain biopsy[1]
Abscess drainage[2]
Radiation implants[3,4]
Deep brain monitoring for epilepsy[1]
Functional neurosurgery[1]
Parkinsonism
Removal of basal ganglia hematoma[5]

Table 2. OU Health Sciences Center Protocol for Brachytherapy

Patient Requirements
Pathology — Glioma Grade 3 or 4. No larger than 5 cm
Location — Supratentorial (preferably cortical)
Course — Recurrent tumors
Requirements Before Patient Considered
Clinical history — Date of surgeries
Radiation History —
Hospital or prior RT
Simulation film
Port films
Number of treatments, dosage
Name & number of contact person
Radiology — *Infused CT* within one month
Implantation
Need PT/PTT, platelet count
on anticonvulsants with a therapeutic level
on decadron 20 mg IV Q6°
Follow-Up
1 week
1 month — each with an infused CT scan
Q 3 months — each with an infused CT scan
Anticonvulsants

Indications

Stereotaxic biopsy is indicated (Table 1) for small, deep-seated or multiple lesions that may be difficult to biopsy safely in the case of tumors, or drain in the case of an abscess or cysts,[2] with open surgical technique. Furthermore, patients who are in relatively poor health and not felt to be candidates for large operative procedures may be candidates for a stereotaxic procedure. The implantation of catheters for after-loading of radioactive seeds,[3] which may be indicated for treatment of malignant brain tumors, or injection of radioactive colloid into a cyst, are additional indications. Table 2 contains the OU Health Sciences Center protocol for brachytherapy that is presently being developed. In rare patients, stereotaxis may be used for deep brain monitoring or functional lesions,[1] or for the evacuation of a deep brain clot.[5]

Risks

Although stereotaxic biopsies are done under local anesthesia in the cooperative patient and frequently involve reduced hospitalization and postoperative pain, this form of biopsy is not indicated for all lesions. The greatest risk of stereotaxic biopsy is that the tissue obtained will be unsatisfactory for a pathological diagnosis. In large series, this problem is present in about 15% to 20% of biopsies done. Other risks include infection, either wound infection or meningitis, and bleeding and/or swelling in the operative site. These complications, although rare, may necessitate an emergency procedure for removal of a clot or tumor debulking. Finally, biopsy of a

suspected vascular lesion is absolutely contraindicated.

Summary

Recent advances in neurological surgery and radiology have allowed for accurate imaging of intracranial pathology and creation of a three-dimensional matrix around the patient's head. Stereotaxic surgical techniques have adapted these high resolution images to a rigid frame network that can accurately place a biopsy needle within small, deep, or multiple lesions.

Stereotaxic biopsy has been successfully used for tumor biopsy in deep locations or in the infirm patient, implantation of radioactive sources or colloidal solutions within cysts, monitoring of sites within the brain for epilepsy surgery, functional neurosurgery for Parkinson's disease, creation of lesions for amelioration of symptoms, and removal of intraparenchymal clots. While stereotaxic biopsy is performed under local anesthesia and the patient's length of hospitalization may be less, many of the risks that are present with open intracranial surgery still exist.

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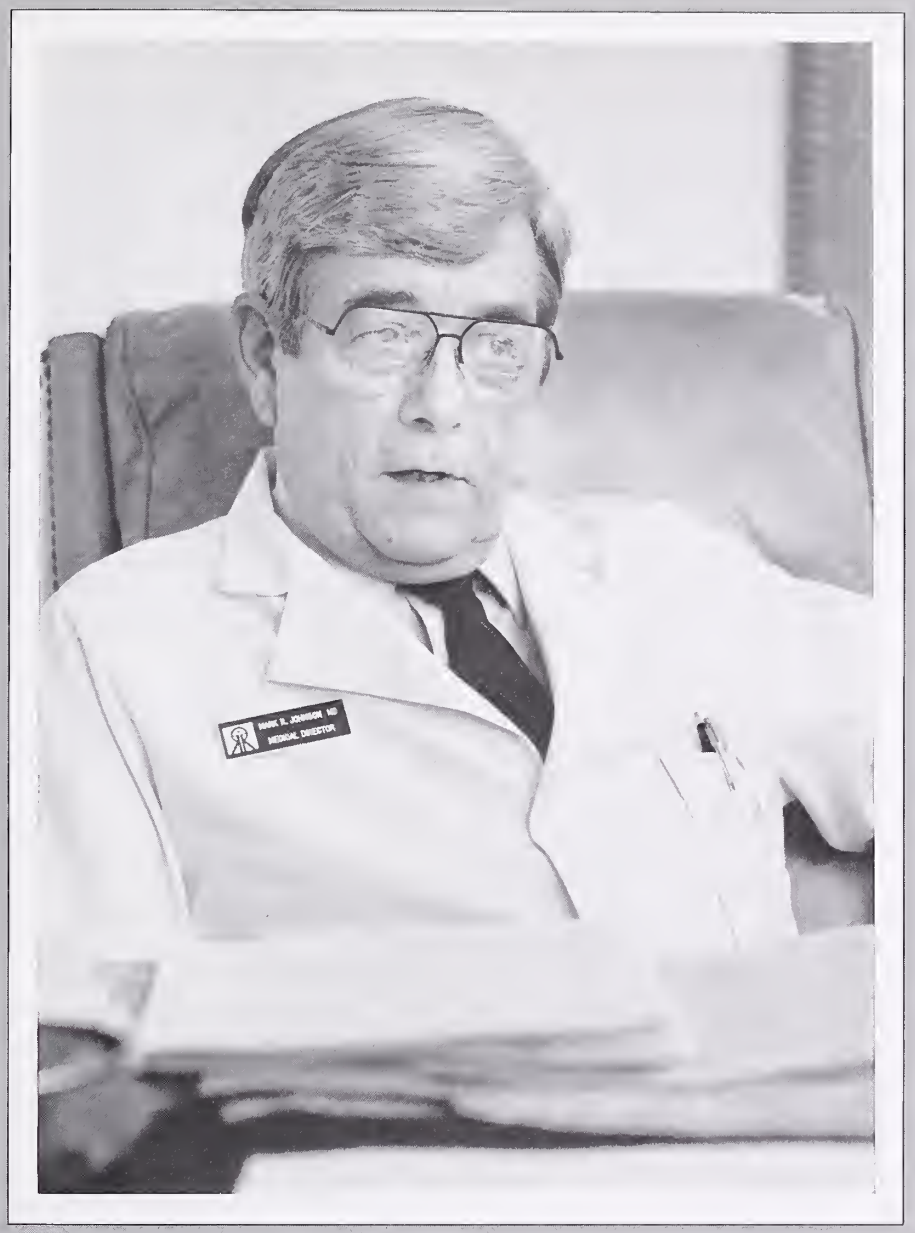
Coming next month

The July JOURNAL will feature photographs from and the complete proceedings of this year's Annual Meeting of the OSMA House of Delegates. Also scheduled for publication is a paper on the efficacy of ground versus helicopter transport in patient outcome.



Mark R. Johnson, MD
Editor-in-Chief, 1968-1989
Editor Emeritus

Only a Pamphleteer . . .

Photo courtesy OUHSC photography
Photographer Jim Thomas

A Job Well Done

Mark Johnson is a man of many parts: clinician, historian, scholar, and gadfly. This diversity made him uniquely suited as editor-in-chief of the JOURNAL. He was trained as an internist in the era of the superb bedside diagnostician, when the use of physical diagnosis coupled with a thoughtful history was not yet overshadowed by the data from scientific technology. These analytic skills, combined with a sound pragmatism, have served Mark well as his interests extended across the complex spectrum of health care delivery. The easy answer or the quick fix are abhorrent to him, as are the current fads of health care economics and the glib pronouncements of their gurus. He has the unusual ability to search out the truth for himself. As Dryden says:

> Errors, like straws, upon the surface flow;
> He who would search for pearls must dive below

To be a successful editor of a state medical journal, a person needs many skills. He must first be an excellent clinician with a profound knowledge and experience of patient care in all its complexity. This allows him to appreciate the needs and interest of the practicing physician and hence to build accordingly the contents of the journal.

Secondly, the editor must be a teacher, must select for publication those items which have educational value, and use his prerogative to question, criticize, assail that which is uncertain, unclear, or erroneous, and to champion that which is true and beneficial.

Thirdly, he must possess a vision of what must be done and the tenacity to follow this. Except for Mark's firmness it is possible that the JOURNAL could have been nothing but a list of meeting notices and committee reports. His support and encouragement of young authors has immeasurably increased the quality of articles published in the JOURNAL over the past twenty years. His interest in style, layout, and typography, shared by the managing editors, has lead to national recognition for the quality of this publication. This is a remarkable achievement of which members of the OSMA can well be proud.

Fourthly, he should have an excellent knowledge of medical history and tradition, particularly in our part of the United States. The idea of honoring outstanding practitioners of Oklahoma by a special monthly issue was Mark's. I suspect, however, that he would have disapproved this tribute to himself had he been consulted. These testimonials, that recognize the great contributions of current medical leaders, will be of great value when the history of Oklahoma medicine is finally written.

Finally the editor should be a scholar, a person well informed in many fields and deeply acquainted with the basic culture of our society. He must possess the ability to express himself concisely and distinctly and to edit the manuscripts of others to approach these ideals. In truth he must be a man of many parts. Mark Johnson is such a unique physician. We were indeed fortunate to have him as editor-in-chief.

> They do most by Books, who could do much without them, and he that chiefly owes himself unto himself, is the substantial Man.
>
> *—Sir Thomas Browne (1605-1682)*

—Robert G. Tompkins, MD
Editor, 1968-1986

Dear Mark:

I extend congratulations and my personal thanks to you for your twenty years of service as editor-in-chief of the JOURNAL. They have been eventful years and many important things have transpired.

My association with you on the JOURNAL has been a real education! I am continually amazed at your knowledge of medical affairs — I broaden it to health matters. Your wide-ranging knowledge includes information about the problems and needs of the physician in practice, of academic medicine and academic centers, and of organized medicine, as well as the political, economic, and ethical aspects of medicine. You know how private practice "works," just as you know how universities operate. Your knowledge of the background of physicians throughout the state has been invaluable to all of us involved with the JOURNAL. I have certainly gained from your sharing your extensive knowledge of the intricacies of medical licensure. Your perceptive appreciation of what concerns the physicians of Oklahoma is impressive. By the same token, your perception of the role of medicine in society in this country has not only been illuminating but has been invaluable to the editorial board.

You have frequently alluded to the importance of role models in medical education and in practice. Identification of some of these who have been important to you helps to explain why you are a well-rounded physician. I agree with you that the relative absence of such role models contributes to some of the problems we observe daily in medicine.

With all of this, you have always kept the welfare of the patient foremost. If and when we have strayed in our JOURNAL deliberations from the central focus on the practicing physician and his patient, you have righted us.

You are also an excellent prognosticator. You have been uncannily correct in your predictions of new trends and programs in health care, not only at the federal but also at state and community levels.

I applaud you for your unflagging efforts to further improve the quality of the JOURNAL. I am confident that without your leadership the JOURNAL would not have received the several awards given to the nation's outstanding state medical journal.

You have set a high standard for us to follow. None of us can forget your constant challenges to make the JOURNAL stronger. We are all in your debt for what you have given to the JOURNAL.

Above all I appreciate your advice, counsel and friendship.

—Harris D. Riley, Jr., MD
Editor, 1968-

I realize that I must act if I am to help change things, and yet all I do is write. I am only a pamphleteer and I wish I were a knight.

—Mark R. Johnson, MD
Summer Complaints, August 1973

MRJ's editorials have never exceeded a page in length, but they number more than 200 and constitute an impressive body of work. Here, in whole and in part, are some of the best.

Whose Battle? Whose Victory?

No great reasoning power or intellect is required to see that the medical profession is under attack. Spearheaded by politically ambitious bureaucrats the attack is being joined by large segments of the general population eager to satisfy diverse motives. Interminable debate could neither identify all the propelling forces nor resolve the conflict. Grave and dreary predictions emanate from all sides of the vaguely drawn lines of battle. A desperate need for unity finds only dissension. An obvious need for cooperation and compromise is met with hostility and name-calling. Faced with issues of cataclysmic portent for our profession and our nation, we are engaged in a sandbox fight . . . hurt, angry and bewildered.

Wounded as we may feel, most of us know that our patients and our public will suffer the greatest casualties if we fail to reach a rational, just and effective armistice. The only victory is the one which will deliver the best possible medical care to the greatest number of people with the greatest possible efficiency in time, money and facilities. Viewed in this light, victory is nowhere in sight and the conflict rages on; leaderless masses with forgotten goals.

As spokesmen for the medical profession and prime targets in the battle we, the practicing physicians, should and can do something to ensure a proper victory. First, we can lend our individual and collective support to efforts to identify those among us who are, in fact, committing unethical, even criminal acts through participation in medical - care, cost -reimbursement programs. Once identified, all such persons whether physicians, paramedical specialists or administrators should be denied the privileges of professional association and society membership. Then and only then can we defend the integrity of our purpose.

Next, we must abandon the luxurious dream of a fair and friendly press. Narratives about hard work and altruistic effort make dull reading and dull reading doesn't sell newspaper and magazines. We must develop and maintain our own system of communication with those whose interests we represent . . . our patients. We have the facilities and the opportunities to present to them detailed, documented facts, in printed form and by word of mouth. We need not and should not rely upon a capricious press to inform our patients or to hold unchallenged sway over their opinions.

Once developed, a system for the dissemination of facts must continuously and honestly present facts. Therefore, we must assume the responsibility for fact finding in every area of activity primarily devoted to the provision of health care and services.

Our patients need to know the administrative costs involved in all health insurance programs, what premium-dollar returns they can expect and the comparative costs of government-sponsored versus patient-sponsored programs. They need to know how their health is influenced by decisions reached by their physicians, the pharmaceutical industry and the FDA. Our patients need to be informed about medical ethics and professional liability and how these considerations influence the quality and cost of their care. They need to be acquainted with the educational process involved in professional training programs. They need to share an understanding of what it is like to study, live and work in the field of medical service.

Leadership, initiative and ingenuity have never been more desperately needed in our profession. Pioneers with missionary zeal must be assigned to this task — the education of those who are to become the victors or the vanquished in this battle, our patients. Your help is needed in their defense and this need is critical.

August 1969

In Anticipation

Visit your automobile dealer soon and take a look at the new 1971 models. They are bound to be longer, heavier, more powerful and more expensive. Possibly, but not certainly, they will be a little less dangerous to drivers, passengers and pedestrians. Less probably, they will not be quite as capable of befouling our atmosphere. One feature of the new models least likely to change is the consistently shoddy assembly which is typical of every American made automobile, regardless of make, model or price. If you buy one of the new models, consider yourself fortunate if you find fewer than a dozen defects, ranging from unattached trim strips to unconnected hydraulic-brake lines. The costs of such poor workmanship in terms of time, money and lives is incalculable.

Workmahship in every automobile plant in this nation is under the direct control of a large and powerful union which has accomplished many good things for its members and, indirectly, for our people generally. This union has, apparently, cared little for economy, quality, safety and the public health.

The leadership of this union is now proposing to tell Congress how to provide economical, high-quality medical care for the entire population.

Our Post Office Department is one of the oldest and most politically dominated branches of the federal government. Of all government operations, the Post Office Department more closely resembles, in structure and mission, a business enterprise than any other department in our bureaucracy. It functions under the complete control of our elected and appointed officials. Its budget approaches eight billion dollars a year and it employs 742,000 people.

It takes longer for much mail to reach its destination today than it took one hundred years ago, and the Post Office Department has been bankrupt for generations.

It is now being proposed that this management system be applied to our nation's health care program.

Poorly fed, poorly clothed and poorly housed people are found in every section of our country, urban, suburban and rural. Statistics show clearly that the rich are getting richer and the poor are getting poorer . . . and more numerous. This, in spite of the increasing billions of dollars which are poured into welfare programs every year. Our welfare system is a hopeless, self-defeating, fruitless extravagance that is choking itself (and our economy) to death.

Welfare is the proper business of government. It is the special business of a department of government which also administers affairs concerning health and education.

It is being proposed that this nation's system of health care be administered by the same department that administers and regulates our welfare programs.

If all these pending proposals are approved by Congress and supported by our citizens we are destined to have a health care program which will be as effective and economical as our welfare program, as efficient and progressive as our Post Office Department, and will provide all the quality and dependability of a new car.

That's *something* to look forward to!

August 1970

If you like our postal service,
you're going to love nationalized health care.

Accounting for Costs, May 1976

Grass Roots Cultivation

Tax supported institutions which provide resources and programs for higher education are political entities. This is not to say that they belong to politicians; neither should they be directed, dominated nor unduly influenced by politicians or persons with political ambitions. But they are political in the sense that they are administered, albeit indirectly, by the body of people comprising the constituency of a state.

Political entities prosper in proportion to the support and commitment they secure from the body politic. Insofar as it represents the manifest will of a constituency, the support of politicians is also important to the prosperity of a political institution. The aggregate influence of those who elect and those elected constitutes "the grass roots," that botanical metaphor so frequently exercised in political campaigns.

Our Health Sciences Center is a tax supported institution . . . at least partially and, at best, inadequately, but nevertheless tax supported. It is therefore a political entity. And it is in deep trouble. Whether it is in trouble at the grass roots can only be assumed; that it is in trouble with our political leaders is a certainty. The basic cause of the trouble, today as in the past, is obscured by a publicized crisis complete with charges and counter-charges, misunderstanding and poor communication.

In analyzing the various causes of these chronic problems, it becomes quite apparent that our medical center simply has not established a significant rapport with the citizens and communities of our state. It has developed no basis of mutual respect and support with the practicing physicians in our cities and towns. It has virtually ignored the grass roots, through which it is nourished, and attempted instead to remain aloof or, under duress, deal directly with politicians at the State Capitol.

Obviously, such policies and attitudes have not succeeded. On the contrary, our medical center has survived in crisis since its earliest beginnings, suspended only by the raveling thread of political benevolence.

Such relationships must change . . . and change now. There are no options. The fiction of political independence and academic sovereignty must be eschewed. The practice of courting politicians must be supplemented if not supplanted by a dynamic, vigorous, unrelenting cultivation of the grass roots of our constituency. Our Health Sciences Center, its institutions, its programs and its people must become a real part of the lay and professional communities of our state. And concurrently, the needs and problems of these communities must become a principal, vital concern of the center.

These changes must and can be swiftly executed, but not without the active cooperation of each physician in the state. Your help is urgently needed by the staff and faculties of the center as they extend their efforts to cultivate the grass roots. Your wisdom is valuable and your guidance will be solicited. When it is, please give generously.

May 1972

When I find it necessary to test the ethical quality of any act or statement, I apply two simple questions: Does it serve the best interests of the patient? And, would I understand and agree that it did if I were the patient?

A Resolution for the New Year, January 1974

I can foresee that you might be "assigned" to me instead of voluntarily selecting me as your physician and that will erode your trust. I can envision the time when you will contact "the doctor on duty," or go directly to a 24-hour "outpatient clinic" when you need medical care. That will compromise the gratitude. Your relationships with your doctor will be virtually impersonal and that will destroy the friendship. I anticipate the day when all of your medical expenses will be prepaid by a "fiscal agent" who took the money from you before you could make any decision about how it would be spent. What, and who, will that destroy?

Dear Patient . . ., November 1969

Certainly we have problems and some of them are growing, but there is no prevailing crisis in medical care. The real crisis will result from our continued failure to solve the real problems. Although we are spending billions of dollars in a massive effort to buy medical care, we are not strengthening or expanding the sources of that care and we are not decreasing the work that must be done.

We are exhausting ourselves in a struggle which is not solving our problems. This is a crisis.

The Phony Crisis, April 1970

Continuing education in medicine is an activity in which every conscientious physician participates. He recognizes that it is his responsibility to keep himself informed of new diagnostic and therapeutic techniques. He understands and accepts this as part of his obligation to patients. He knows that to engage in the practice of medicine with yesterday's knowledge is to commit a fraud. . . .

If you are not currently engaged in a program of continuing education, or if you are smugly confident about your knowledge and experience, you need to take immediate action. You are not fulfilling the terms of the contract you have with your patients and your profession or you are not even aware of your ignorance. In the first condition you are committing a crime; in the second, a sin.

Making the Grade, September 1970

In accepting the utilization review committee as a legitimate and ethical member of the family of hospital organizations, we embrace a dangerous tenet, namely that a physician's decision concerning the appropriate time for dismissal of his patients from the hospital should be subjected to peer review. If such a tenet is valid, then with even more persuasion, the physician's decision concerning his patient's need for hospitalization also should be subject to review by his peers. In effect, physicians should be required to obtain approval from some peer group, perhaps a "pre-utilization review committee," prior to hospitalizing certain specified cases.

Maybe someone has already thought of that.

Second Thoughts, Anyone? October 1970

In the beginning there's you and your patient and a blank piece of paper. Of the three, the paper will emerge as survivor in the great majority of cases. The mortals and the relationships that exist between them are relatively transient. The records of that relationship can be permanent. It is the clinical record which serves as the wellspring of all our knowledge in the medical arts and sciences. Also, it is the record which provides the foundation for the medical care our patients will receive. . . .

Converting blank pieces of paper to good medical records may well be the physician's greatest responsibility to his patients.

Something of Permanence, March 1971

One of the surest ways to invite disaster in the practice of medicine is to act in haste. The most certain way to alienate a patient is to be abrupt, hurried, or casual with him. The most prestigious reputation, the most experienced skill, the most unanimous acclaim cannot compensate the sin of brevity in a patient's evaluation of the quality of medical care he received from the hands of a technician who didn't take the time to be a physician. Compassion cannot be expressed in haste. Anxiety cannot be relieved in a moment. Sincerity, concern, and personal respect can be demonstrated only through the devotion of time.

The Passing of Time, September 1974

Fraud: Government Issue

Not long ago I read that fewer than one-tenth of one percent of the nation's physicians were guilty of submitting fraudulent Medicare claims. I have never read or heard a figure representing the number of physicians who have been defrauded, not to mention defamed and maligned, by our government's Medicare program. I would guess it approaches ninety percent or more. And, of course, one-hundred percent of Medicare "beneficiaries" are victims of this politically motivated fraud.

If you find it difficult to accept these views as valid you are either naive or unaware of the meaning of 'fraud.'

From its earliest beginnings, Medicare has been represented to be a plan which would provide payments for physicians and hospitals engaged in the medical care of its subscribers. No mention was or has been made of the fact that the pretended underwriter and not the physician would determine the essential and therefore compensable elements of medical care. Certainly there has been no intimation that, in most cases, such determinations would be made independently and summarily by the officials of Medicare. Incomplete disclosure is a hallmark of fraud.

Traditionally, Medicare has been promoted as a program which would help preserve the health and prevent illness among its participants. In truth, however, it provides for payments only in connection with illnesses and thus discourages all health maintenance efforts. Deception is an integral component of fraud.

Completely ignoring the complexities of human illness and the great variation in the amounts of time needed to resolve those complexities, Medicare pretends that every case of pneumonia, for example, can be diagnosed and treated in exactly the same way and in exactly the same amounts of time, as any other case of pneumonia. A ludicrous pretension, even for a layman. Nevertheless, a physician who charges a realistic fee for the time he spends in caring for a patient who is afflicted with pneumonia and Medicare, is denied equitable remuneration. To compound the theft of his time, his patient is informed, in words typed on a financial transaction document, that his physician has overcharged him. There is no suggestion that, in fact, Medicare has underremunerated the patient or underpaid his physician. Derogation of integrity and honesty is the forerunner and companion of fraud.

In its original form and size, with its restrictions and limitations, Medicare was viewed (probably erroneously) by physicians as providing a fairly reasonable schedule of payments; by economists as a possibly bearable burden and by the public as a real bargain. Since its birth, however, Medicare has, not at all surprisingly, undergone a rapid metamorphosis. From a small foot in the door, it has forced itself in, and is devouring great chunks of our resources. It is demanding more in premiums while giving less in benefits. It has increased the paperwork burden of physicians and hospitals; consequently it has raised the cost and reduced the resources of medical care for everyone. It has destroyed the confidentiality of and willfully alienated the physician-patient relationship. It is a parasite masquerading as a host. Trickery is characteristic of fraud.

December 1973

We must make friends of our patients, and become their friends. If we cannot be friends with certain patients, we should not attempt to be their physician. Real friends just don't sue each other.

Preventive Caring, April 1976

The Surprise That Isn't

Surprise, surprise! Health care costs are soaring. In the past year Medicare costs have risen sharply with umpteen percent increase in payments to physicians, hospitals and drug vendors. As a nation, we are spending more for health care than any nation on earth or in history. At the present rate of climb, the costs of Medicare and Medicaid programs will bankrupt our federal and state governments. This shocking and thoroughly unexpected turn of events justifies — even mandates — the enactment of immediate and stringent cost-control measures. The options relating to the selection of such measures are limited, of course. There can be a freeze on payments to the providers of services or there can be severe restrictions on eligibility for participation in such programs. It is not difficult to guess which of these options is politically popular and — as we say in Jargonia — "viable."

Rest assured, when the decision is made, it will be the result of simple process. It will be unstudied, abrupt and unfair. Little if any notice will be taken of such issues as physicians' net incomes, hospitals' profits and losses or drug-development and marketing costs. More significantly, the costs of administering and policing the programs themselves will not be considered for the simple reason that they are not known. Furthermore, they would never be publicized if they were, through some improbable circumstance, determined. Such revelations are unpopular in the bureaucracy; heretical in the media. After all, the intimation that administrative costs are a major factor in the rising price of health care is neither documented nor cited in any of the public bellowing about the problem. We are allowed if not encouraged to believe that pure greed on the part of physicians, hospitals and the pharmaceutical industry is wrecking the wisely conceived, efficiently administered and fiscally sound Medicare/Medicaid programs.

Just once, it would be refreshing to see a best-estimate of the total cost of administering these programs publicized, together with a year-by-year tally of their increases. Then, perhaps, we would have a more accurate understanding of what should be frozen and what should be capped. Then, we could all be surprised.

As it is, there are no real surprises. The crazy spiral of Medicare costs was foreseen and predicted years ago. It was clearly demonstrated in other nations decades before we undertook such ventures.

Surprise! There are no surprises.

February 1982

Next time you drive into the parking lot at your favorite hospital, look for the parking facilities provided for patients. If you find them, you can get a good idea about the attitudes which prevail inside the hospital.

Patients Last, March 1980

Perhaps the FDA will, ultimately, promote drug research and development instead of discouraging it as is now the case; lower the costs of drugs rather than raise them as is now the case; assist physicians and pharmacists in their tasks instead of frustrating them as is now the case; strengthen the bonds of trust between patients and physicians rather than destroying it as is now the case; function as a source of scientific knowledge and advice for a nation of people instead of a pedantic and dictatorial tool for a bureaucracy with largely political objectives, as is now the case. Perhaps, but I doubt it. . . .

Can anyone know how much he suffers because an imperfect wisdom condemned the source of his relief? Can the patient who died of cancer yesterday be grateful that he was not subjected to the hazards of a cure, unprocessed and unapproved by the FDA?

I doubt it.

I Doubt It, March 1972

The physician of today takes for granted that it is necessary to do things *to* his patients before (or even instead of) doing things *for* them. Chin-rubbing contemplation, question-asking, listening, thinking, and consoling seem to be passé techniques.

To-and-For, April 1973

Why don't we . . .

- Establish an FDA-type agency for bureaucrats which will require proof-of-effectiveness before, during, and after approving their pay checks?
- Set up a PSRO for all public officials, elected and appointed, in order to monitor their performance and establish penalties for poor judgment, derelictions, and oversights?
- Require periodic re-licensure of all lawyers, judges, accountants, architects, and engineers? . . .
- Quit paying for malpractice insurance and let our patients recover from the delusion that all physicians are rich?

Why Don't We, January 1976

A physician's ego is well developed, if not insatiable. If it were not, he could not have endured the ordeal of becoming a physician.

Rising Costs and Falling Heroes, January 1983

Defined, the consensus is that we who entered medical school thirty or forty years ago feel fortunate that we are approaching the end of our professional careers and not the beginning. . . .

Imagine, if you can, the influence this consensus will have on those who have chosen to follow us, those bright, capable, ambitious and idealistic youngsters who are now engaged in the agonizing task of selecting their careers.

Sad Consensus, November 1984

Two aspects of the changing role of the physician in contemporary society are *not* complicated but exquisitely clear: We are voluntarily and involuntarily relinquishing our authority in all matters of medical and health care, and we are not relinquishing or even sharing the total individual and collective liability and responsibility we assume in providing that care.

Heading into the Sunset, June 1985

It does seem a bit strange that a doctor will agree to reduce his fees to a corporation entrepreneur who selects patients for him, while not offering the same reduction to a patient who selected him.

On Becoming Generic, February 1986

A prophetic wag pointed out to me recently that the new rules proposing to make DRG lackeys of hospital-based radiologists, anesthesiologists, and pathologists might soon be extended to include emergency care physicians, adding that the acronym would then gain the status of an appropriately descriptive verb.

From RAP to RAPE and Beyond, April 1987

As more and more tort reform statutes are declared invalid or unconstitutional, it becomes clear that our salvation, as a profession and possibly as a nation, lies in our ability to educate the public, that amorphous mass from which juries are picked. Had we devoted more of our efforts and dollars to this task a generation or two ago, tort reform might never have become an issue.

Reforming Reform, September 1988

Self Examination

If you get out of bed each morning looking forward to seeing your patients

If you patients ask you how *you* feel and inquire about your family

If you have made real friends of all your patients

If you feel flattered each time a new patient consults you

If you can imagine yourself in your patient's place and would willingly submit to and pay for all the tests and treatments you recommend

If you can say "I don't know" without a sense of shame

If you can welcome a request for another opinion

If you are proud of the clinical records you keep

If you can discuss and explain your fees without hesitation or hostility

If those who know you best become your patients

If you feel tears in your eyes when a patient dies but no guilt when you announce the death to the family

If those who help you care for your patients decline offers for more lucrative positions in order to continue caring for your patients

If you feel wealthy irrespective of the net worth shown on your financial statement

If the members of your family do not resent or sacrifice the time you spend with your patients

If your children visit with you during breakfast and dinner

If your family is bound in mutual respect, affection, and pleasure

If you are awed by the marvelous magic of the human body

If you are humbled by the majesty of the human mind

If your soul is nurtured by feeling needed

If your self esteem derives from serving others

If you lie down at night filled with gratitude for the bounty of your life

Then you will know that you practice medicine not for a living but as a way of life. You will know that you *are* a physician.

Unfortunately you will also know that you are part of an endangered species.

September 1983

Greatness is a complex and unfortunately rare quality of the human creature. It evolves as a combination of talent, intellect, wisdom, and one uniquely indispensable quality. That quality is humility.

One More Gift, December 1987

Not For Christmas Only

My favorite Christmas story has nothing to do with the season of Christmas. It has to do with what I perceive as the spirit of Christmas. It has to do with the meaning of life as distinguished from survival and death. It is a true story.

A patient of mine who, because of the recent death of her father had found it necessary to place her mother in a nursing home, asked if I would visit her mother and attend to her medical needs. I agreed and scheduled a visit to the home. There I met a frail, gray woman who greeted me with a welcoming smile and an outstretched hand; it was like her voice — thin and soft and warm. She had prepared her world and herself for my visit. Everything was clean and neat and dusted with the subtle fragrance of bath powder. Her hair framed a gentle countenance bejeweled with sparkling blue eyes. She answered my questions with candor and intelligence, and her memory was unimpaired, as was her sense of humor. I learned from her that she had taught school for almost fifty years. I learned from the cards standing half open and crowded on her bedside table that she was the object of many loves. Her anecdotes about the sender of each card left no doubt that she was aware of the love they symbolized.

As I was finishing my task, my new friend and patient interrupted my writing.

"Now, Doctor, would you answer a question for me?" she asked with a touch of apology in her tone.

"I'll be happy to try," I said, anticipating a request for a summary of my findings.

"Why are you doing this?" Totally devoid of rancor, her questions continued. "Do you expect me to start teaching again? To get up out of this bed, leave this place, and make some great contribution to society? To be worth something again? Why should I continue living? What is the purpose of it?"

My paltry resources left me speechless. I was embarrassed by the soundless pause held so uncomfortably in my open mouth. My response, hastily gathered from the scraps of irrelevant fact, was vacuous.

"Because your daughter wants you to be well cared for," I explained as I began to take my leave. I felt naked as I promised to return for periodic visits.

"That's very nice of you, and I don't want you to think I'm ungrateful or unappreciative. I just can't help wondering," she replied.

It was almost a week before I found the answer to her question. A week of hearing it asked again and again. A week of searching for my own purposes, my own meaning of life, my own meaning as a physician.

On the pretense of reporting her test results, I stopped to visit my patient — the recently widowed, long-retired school teacher who had taught me, by asking the simplest question, the most profound lesson of my life.

"I found the answer to your question," I said.

She clasped my hand with both of hers. "Wonderful, Doctor. Please tell me." I knew she remembered my discomfort at the conclusion of our first visit.

"First, I want to thank you for asking. You've taught me one of the most important lessons of my life, even though you are retired from teaching," I began. She smiled expectantly. I continued.

"I am doing all of this because you are loved, not only by your daughter but by hundreds of others," I explained, waving my hand toward the cards on the table. "Furthermore, you are aware of this love and greatly enriched by it. You are a very wealthy woman in terms of life's meanings. In turn, you love many, many people. Your life is filled with loving and being loved, even more than it was the day you were born.

"So, my dear teacher, you now have as much reason for living as you had the day your life began, don't you?" I studied her face and eyes, watching for her response. Slowly her anxious expression faded, and a winsome smile surrounded her mouth.

"Yes, yes — I understand. Put that way — yes, indeed. To love and be loved — that really is what it's all about, isn't it?" She gently squeezed my hand. "Thank you *so* much for that, Doctor. Now I can stop wondering."

Irrespective of your religious convictions, Merry Christmas . . . for the rest of your life.

December 1985

It is always easier to build an enduring structure upon a strong foundation. Certainly no one of us alone can accomplish the task, but together we can make certain that tomorrow's accomplishments will be worthy of yesterday's sacrifices.

—Mark R. Johnson, MD
First editorial
Succession, November 1968

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News from
the Oklahoma State
Department of Health

Teen Wellness Check

As first reported in this journal two years ago, the Oklahoma State Department of Health (OSDH) provides a health education program for high school students called Teen Wellness Check. The program uses a comprehensive computer-scored questionnaire which covers a wide variety of health concerns, ranging from nutrition and exercise to safety and seat belt use. Upon completing the questionnaire, a microcomputer scores the individual answers, returns a personalized printout that assesses major health risks, and provides advice on how to improve one's lifestyle. When used with appropriate and confidential counseling and referral, the Teen Wellness Check can be instrumental in helping teenagers make those important decisions that will lead to a lifetime of optimal health.

In addition to individual results, the Wellness Check program allows for the aggregation of cumulative, non-identifying health risk data on teenagers completing the questionnaire. The OSDH has collected data on 3811 teenagers from October 1985 through March 1989. Some of the most significant risk factors among Oklahoma teenagers included: "don't always wear seat belts" (77%, 2922 total); "don't eat a variety of foods from four food groups daily" (68%, 2852 total); "don't get 20 minutes of aerobic exercise at least 3 times weekly" (51%, 1935 total); "drink alcohol" (35%, 1915 total); "drive or ride under the influence of alcohol" (35%, 1320 total); "highly stressed" (22%, 822 total).

As in other states, the leading causes of death for teenagers in Oklahoma is motor vehicle accidents. Many of these accidents are alcohol related. Thus of particular concern from the Wellness Check summary data is the high percentage of students not wearing seat belts (77%) combined with the relatively high percentage of drinking and driving or riding under the influence of alcohol (35%).

For more information on Teen Wellness Check, contact Neil Hann, MPH, Health Education and Information Service, (405) 271-5601.

DISEASE	Monthly Reporting Period Ending 3/31/89	TOTAL TO DATE		
		This Year	Last Year	5 Yr. Avg.
ACQUIRED IMMUNE DEFICIENCY SYNDROME	21	34	38	7
CAMPYLOBACTER INFECTIONS	13	27	24	37
CHLAMYDIA INFECTIONS	210	555	641	#
ENCEPHALITIS, INFECTIOUS	2	5	3	5
GIARDIA INFECTIONS	9	37	39	46
GONORRHEA (Use ODH Form 228)	577	1692	1805	2596
HAEMOPHILUS INFLUENZAE INVASIVE DISEASE	18	46	66	60
HEPATITIS A	28	114	194	122
HEPATITIS B	14	45	57	50
HEPATITIS, NON-A NON-B	2	8	10	13
HEPATITIS UNSPECIFIED	2	7	10	18
HUMAN IMMUNODEFICIENCY VIRUS INFECTIONS	28	110	*	*
MENINGITIS, BACTERIAL (non-meningococcal, non H. Influenzae)	11	32	5	15
MENINGOCOCCAL INFECTIONS	3	6	7	11
MUMPS	64	122	91	—
PERTUSSIS	5	8	23	26
RABIES (ANIMAL)	12	20	5	15
ROCKY MOUNTAIN SPOTTED FEVER	0	1	2	2
SALMONELLA INFECTIONS	21	60	58	60
SHIGELLA INFECTIONS	16	29	32	39
SYPHILIS (Use ODH Form 228)	10	23	44	45
TUBERCULOSIS	17	27	45	56
TULAREMIA	1	2	2	2

#Made Reportable in 1985 —Made Reportable in 1987 *Made Reportable in 1988

Injuries	Total to Date This Year	Fatalities No. (%)
BURN	137	33 (24)
TRAUMATIC SPINAL CORD INJ	14	4 (29)
DROWNING/ NEAR DROWNING	13	11 (85)

Diseases of Low Frequency	Total to Date This Year
AMEBIASIS	0
BRUCELLOSIS	1
LEGIONNAIRES' DISEASE	6
MALARIA	1
MEASLES (RUBEOLA)	23
REYE SYNDROME	0
RUBELLA	0
TETANUS	0
TOXIC SHOCK SYNDROME	2
TYPHOID FEVER	0

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Endowed by Stanton L. Young

F. Daniel Duffy, MD, receives Master Teaching Award in OKC

F. Daniel Duffy, MD, professor of internal medicine and chairman of the Department of Internal Medicine at the University of Oklahoma Tulsa Medical College, is the recipient of the Sixth Annual Stanton L. Young Master Teacher Award.

F. Daniel Duffy, MD

The award was presented during a formal gathering April 6 at the Oklahoma City Golf and Country Club. Hosting the event were Interim OU President David Swank, OU Health Sciences Center Provost Clayton Rich, and the OU Board of Regents.

The Stanton L. Young Master Teacher Award was established in 1983 through an endowment made by Oklahoma City businessman Stanton L. Young and is presented annually to a faculty member at the OU College of Medicine. Mr and Mrs Young were on hand to present the award, one of the largest in the nation for medical teaching excellence.

Rich noted that Duffy is emblematic of the criteria by which the award is presented. "This is a truly inspiring teacher, one who goes beyond excellence in the classroom or on clinical rounds, and touches lives and changes attitudes," he said.

"Such master teachers are respected for their professional excellence and make effective contact with students because of their strong personal involvement," Rich added. "They inspire by the example of their commitment as physicians or scientists, often both, and by their quality as human beings."

Practices medicine and conservation

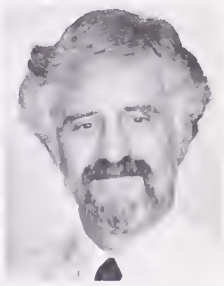
Dr Hulsey becomes chairman of National Wildlife Federation

George H. Hulsey, MD, a family practitioner and conservationist in Norman, has been elected chairman of the National Wildlife Federation (NWF), the nation's largest conservation organization. Delegates from the federation's 51 affiliate organizations elected Hulsey to the position at NWF's annual meeting in Washington this spring.

Active on a wide range of grass roots environmental issues for many years, Hulsey is past president of the Oklahoma Wildlife Federation (OWF), has served on the NWF board since 1976, and has served nine terms on NWF's executive committee.

His conservation activities include the creation of a 160-acre "Urban Wilderness," a kids fishing derby, opposing political influence in resource agencies, and training wildlife biologists in Mexico.

Hulsey was also responsible for a stockholders' petition that lead negotiations with the Weyerhaeuser Corporation, resulting in the protection of wildlife habitat on 1.8 million acres of the company's land in Oklahoma and Arkansas.


George H. Hulsey, MD

In addition to his other activities, Hulsey writes a column, "Wilderness Medicine," and teaches seminars on the subject around the country at NWF's Conservation Summits.

Hulsey has earned widespread recognition for his efforts, winning the federation's Conservation Service Award in 1971, the *Outdoor Life* Conservationist of the Year Award in 1978, and OWF's Conservationist of the Year in 1988.

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Report from Yale

Study bias doesn't account for aspirin – Reye's syndrome link

A new study offers more confirming evidence of the link between aspirin use and the potentially fatal Reye's syndrome, concluding that study bias does not explain the association. Report of the study appears in the May 5 *Journal of the American Medical Association (JAMA)*.

The authors, Brian W. Forsyth, MD, of the Yale University School of Medicine, New Haven, Conn, and colleagues, say they undertook the study to answer lingering concerns about potential bias in earlier studies suggesting the association between aspirin use during a viral illness in children and adolescents and the subsequent onset of Reye's. Several reports, including a major Public Health Service study, have found strong evidence of such a link.

The new study, which involved 24 case subjects and 48 matched controls, found that 88% of the cases but only 17% of controls received aspirin prior to the onset of Reye's. Those with Reye's were 35 times more likely to have used aspirin, the authors say.

The study then looked at five sources of potential bias that had not been addressed fully in earlier reports. These included such issues as whether aspirin was used before or after the onset of Reye's; whether aspirin use was properly recalled; and whether reported aspirin use influenced the diagnosis of Reye's. The study itself was designed to eliminate several of these potential biases, while a number of additional analyses were used to reduce or avoid others.

Together, the authors say, these analyses demonstrated that the Reye's-aspirin link could not be due to study biases, helping to eliminate methodological error as the explanation for the association. However, the report notes, while the incidence of Reye's has decreased in recent years, "our ability to find a substantial number of cases for this study points to the ongoing occurrence of the disease. Continued efforts to alert patients and adolescents about the association between aspirin and Reye's syndrome are warranted."

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FDA audits research data to detect scientific misconduct

The Food and Drug Administration's (FDA) research data auditing program appears to reduce some, but not all kinds of scientific misconduct affecting drug trials, says a study in the May 5 *Journal of the American Medical Assciation (JAMA)*.

The study recommends the FDA continue the auditing program, although additional measures appear to be needed to reduce misconduct that remains unchecked, say authors Martin F. Shapiro, MD, PhD, of UCLA, and Robert P. Charrow, JD, of the Department of Health and Human Services, Washington, DC. They also believe the FDA should be allowed to suspend researchers prior to a hearing when evidence of misconduct is substantial, and that drug manufacturers should be penalized when they fail to detect the misconduct of their investigators.

The authors base their recommendations on a study of the FDA's audits, or in-depth reviews, of drug trial data, conducted between June 1977 and April 1988. "Serious deficiencies were detected in 12% of audits prior to October 1985, but in only 7% since that date," they say. However, some kinds of serious deficiencies were detected after October 1985 as often as before. Furthermore, the authors say, a number of investigators were allowed to continue participating in drug trials even after being found to have flagrantly violated scientific research norms.

In recent years, the numbers of reports of scientific misconduct has jumped sharply, along with calls from various sectors for remedies to what many consider a growing problem, the authors write. Unlike other federal agencies, the FDA routinely audits clinical trials for evidence of scientific misconduct. While many oppose introduction of data audits into other federally funded research, the Department of Health and Human Services is now considering such a program.

In audits of 1,955 investigators, the FDA found 211 cases of serious deficiencies, the authors report. In 74 (4%), deficiencies were so serious that official action was undertaken. Categories of misconduct detected included deliberate "fudging" of data, apparently motivated by researchers' desires to advance their careers; deliberate deceit, apparently for economic gain; arrogant disregard of scientific protocols; and unintentional errors due to the investigator's lack of experience or competence. The last category was included because the potential harm to the public from these unintentional mistakes is as great as from deliberate deviations from sound scientific practice, the authors say.

Prior to October 1985, 12% of audits were judged to contain serious deficiencies, of which 5% led to "for-cause audits" to determine if disciplinary actions were warranted. After that date, 8% were found to be seriously deficient and 1% required further actions. While the rates of some problems — such as a failure to document informed patient consent — fell dramatically, rates of others did not, the authors report. These include a failure to adhere to experimental protocols and failure to keep accurate records.

About 16% of for-cause audits led to disqualification or other actions restricting the investigators' access to conduct further drug trials. However, 17 investigators (4%), who had repeatedly and deliberately violated regulations, escaped disqualification by assuring the FDA that they would avoid such conduct in the future. More recently, the FDA has begun to disqualify some investigators in spite of such promises, the authors say.

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Charles Nathaniel Atkins, MD	December 28
French LaZelle Worthen, MD	December 28

1989

John Hoyle Carlock, Jr., MD	January 19
Michael Bailey McCarty, MD	January 22
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Moorman Paul Prosser, MD	February 12
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Singing Cowboys and All that Jazz: A Short History of Popular Music in Oklahoma. By William W. Savage, Jr. Norman: University of Oklahoma Press, 1983. Pp 185, illus, price $14.95.

Histories of Oklahoma, according to the author, do not often speak of the state's contributions to American popular culture. Their concerns lie more with the fine arts than with the popular ones, perhaps to counterbalance the national image of Oklahoma as part of the Dust Bowl, a place devoid of the usual measures of culture. The Oklahoma City Blue Devils, organized in the early 1920s, was "the best collection of musicians in the Southwest and one of the best in the United States," according to William W. Savage, Jr., a member of the history department of the University of Oklahoma. The black band played chiefly at the city's Ritz Ballroom, but also traveled throughout Oklahoma and other states. Among its members were pianist William (Count) Basie and Lester Young, the Mississippi-born saxophonist. When the Depression hit and Oklahomans could no longer afford to spend money on music, the Blue Devils transferred to Kansas City.

Savage states that following the publication of John Steinbeck's *The Grapes of Wrath,* the source of considerable embarrassment for Oklahomans, a search was conducted by Oklahomans for something to take its place in or to force it from the national imagination. "The regents of the University of Oklahoma would seize upon big-time football as the panacea for a suffering image: give the people a winning team and they will forget the negativism of alien authors," he wrote. In 1943, Oklahoma was still struggling in the throes of a massive image crisis. This was occasioned by the national perception of Oklahoma as portrayed in the film version of *The Grapes of Wrath,* brought to motion picture theaters in 1940. Savage states that this struggle has continued unabated for more than four decades.

The first singing cowboy (in terms of a national audience) was an Oklahoman, Oho Gray, who also was one of the precursors of western swing. Many well-known gospel songs were of Oklahoma origin. More recently, Oklahoma has produced rock artists who have remained in the public eye. There is a chapter dealing with Woody Guthrie and another includes Oklahoma-connected composers Roger Miller, Hoyt Axton, Gail Kubik, and Sheb Wooley.

This book about the history of popular music in Oklahoma is interesting and entertaining. Much of the information provided was new to this reviewer, who is not an Oklahoma native.

—Harris D. Riley, Jr., MD
Oklahoma City

Cytomegalovirus: Biology and Infection. By Monto Ho. New York: Plenum Medical Book Company, 1982. Pp 309, price $39.50.

This monograph by Monto Ho is one volume in the series entitled *Current Topics in Infectious Diseases.* He has provided a comprehensive treatment of the biology and infection due to cytomegalovirus (CMV).

All workers in the field of infectious diseases are aware of the remarkable properties of CMV. It has an interesting history, which may be divided into the cytopathological (1905-1956) and the virological. In 1904, Ribbert wrote that in 1881 he saw large "protozoan-like" cells in the sections of a kidney of an alleged syphilitic newborn. Over the next three decades, other workers described similar lesions in

DEATHS

John Hoyle Carlock, Jr., MD
1910 - 1989

Former OSMA president and Ardmore native J. Hoyle Carlock, Jr., MD, died in his hometown January 19, 1989. A retired general practitioner and surgeon, Dr Carlock was graduated from Tulane University School of Medicine, New Orleans, in 1935. His practice in Ardmore was interrupted by a five-year tour of active duty with the US Army during World War II; he was discharged in 1945 as a Lt. Colonel. Dr Carlock served as president of the OSMA in 1962-63 and of the Southern Medical Association in 1972.

Mary Edna Sippel, MD
1893 - 1989

Mary Edna Sippel, MD, a general practitioner in Tulsa for 45 years, died April 10, 1989. Dr Sippel was a member of the class of 1915 at Kansas University College of Medicine. She practiced medicine in Kansas City for several years and later established a practice in Tulsa in 1929. She retired in 1974, the same year she was named a Tulsa County Medical Society Doctor of the Year.

tissues of newborns. In 1921, Goodpasture and Talbot reported the demonstration of intranuclear inclusions in the various organs of a six-week-old infant, and they introduced the term "cytomegalia." In 1925, Goodpasture demonstrated the experimental relationship between herpetic and syphilitic infection in the rabbit and intranuclear inclusions, an important fundamental observation. By 1932, twenty-five cases of apparent cytomegalic inclusion disease had been described.

In 1952, the first ante mortem cytologic diagnosis was made by demonstration of cells containing large intranuclear inclusions in the urine; at autopsy, inclusions were found in several organ systems. After the demonstration that human cells could be grown in cultures, CMV was isolated at three different centers in this country. This opened the door to rapid advances in our acquisition of knowledge concerning this organism.

We know that CMV is an opportunistic organism that usually infects a susceptible host, particularly the newborn infant, but also hosts that are immunocompromised, such as organ transplant recipients and patients receiving immunosuppressive therapy. The infected individual may develop any of a wide spectrum of manifestations, ranging from self-limited subclinical infection to severe, disseminated, life-threatening disease. Moreover, CMV infection induces an immunosuppressive state that makes the infection even more difficult to treat. Although CMV is a member of the herpes-virus group, to date there are no drugs readily available for its treatment.

The monograph contains 14 chapters. After a chapter dealing with the history of the infection, there is one dealing with characteristics of the organism and one on human cytomegalovirus infections in cells and tissues. Following an extensive chapter dealing with serologic tests for detection of infection, there are chapters dealing with various aspects of CMV and the infections it produces. These include variants, epidemiology, cell-mediated immunity, and pathology of the infection. Congenital and perinatal infections are discussed in chapter nine and acquired infections in chapter ten. There is a separate chapter on the occurrence of CMV infec-

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tions in immunosuppressed patients and a section discussing possible treatment and prevention.

Part II of this book discusses cytomegaloviruses of other animals.

This is an excellent and comprehensive reference book. It will be most useful to both microbiologists and clinicians.

—Harris D. Riley, Jr., MD
Oklahoma City

The Hammonds of Redcliffe. Edited by Carol Bleser. New York: Oxford University Press, 1987. Pp 421, illus, price $19.95.

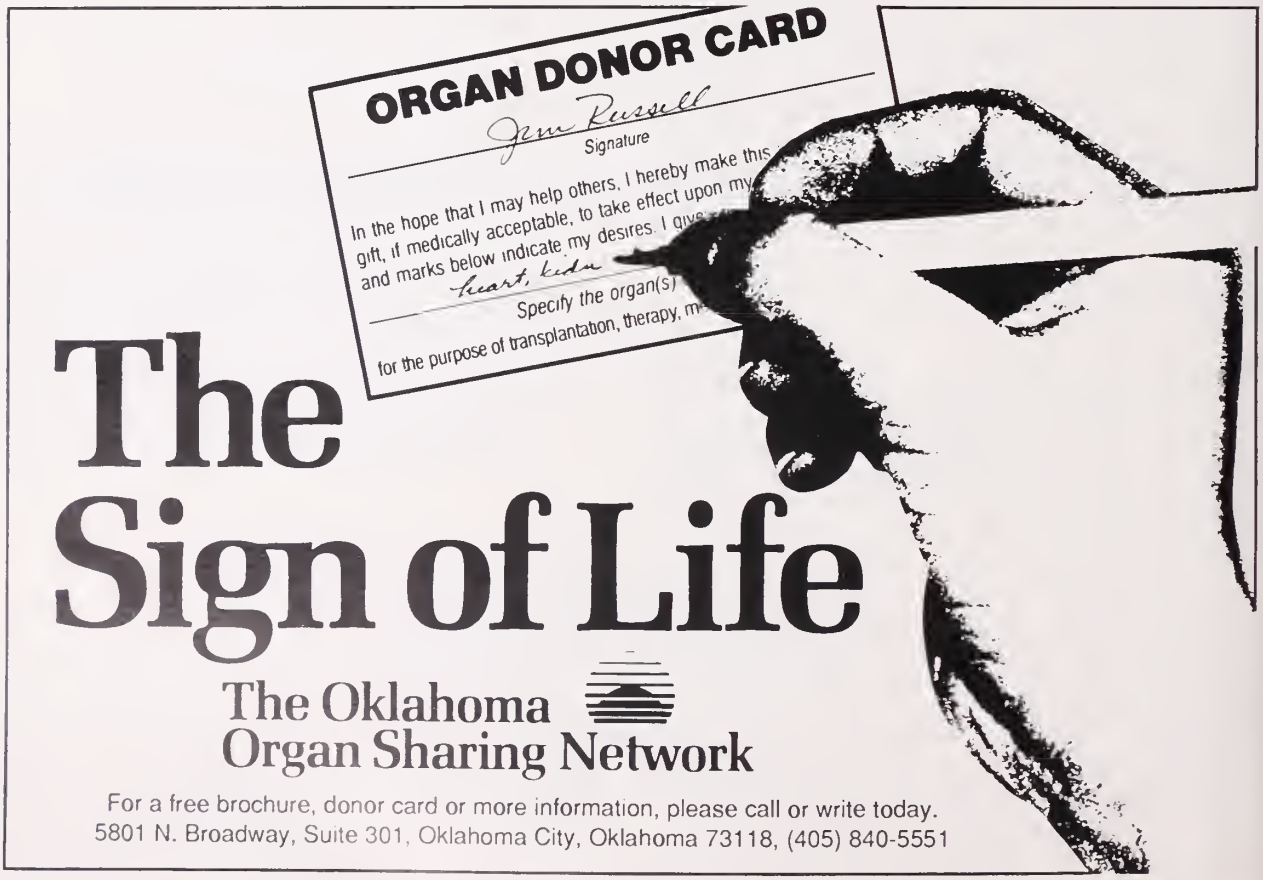
James Henry Hammond (1807-1864), prototypical Southern planter and politician, was an important force in South Carolina during the two decades prior to the Civil War. In 1855 he purchased a 400-acre estate at Beech Island, South Carolina, which he named Redcliffe.

Carol Bleser has selected correspondence covering almost 100 years of this prominent South Carolina family's history, from the antebellum period into the twentieth century. She has done an excellent job in selecting and blending together letters from diverse sources to create a very readable narrative covering four generations.

The book is divided into four parts. Two of the important strengths of this book lie in the well-done introductory sections to each part and in the excellent footnotes, which succinctly provide a vast amount of information on individuals, both prominent and obscure.

The first portion of the book is particularly interesting. It focuses on James Henry Hammond, the family patriarch. He was one of the most successful planters in antebellum South Carolina, owning more than 14,000 acres and more than 330 slaves. He was a compulsive record keeper, which greatly aided the contruction of the book. This section affords a useful overview of the political, economic, and to some extent military events of the Civil War era, and it establishes in forceful manner the character of Hammond and his family.

In 1859 a new generation comes to the front with the courtship by Senator Hammond's eldest son,



Harry, of Emily Cumming, a member of a prominent Augusta, Georgia, family. The two families were joined in 1859 by the marriage of Emily and Harry, and the story centers on them and their descendants after the death of James Henry Hammond in 1864. Harry was destined to assume the enormous burden of carrying on his father's agricultural activities and advances as well as the Hammond tradition. In the second section of the book, entitled "The Preserver," Harry Hammond becomes the focus. This section describes the decline of the family's fortunes and Harry's dissatisfaction with the life of a planter, which he had assumed after leaving his position on the faculty at the University of Georgia and after a stint in the Civil War. The section is also characterized by the great attachment between Harry and Emily Hammond.

In the third portion, Katharine, daughter of Harry and Emily, assumes the center of attention. This section covers only eleven years. In the 1890s, Katharine attended Johns Hopkins School of Nursing, where she met her future husband, John Sedgewick Billings, son of the famous Dr John Shaw Billings. Katharine remained homesick for the family and Redcliffe, and these themes dominate her letters.

The fourth group of letters is characterized by the marital difficulties of Katharine and her husband, their subsequent divorce, and the maturation of their son, John Shaw Billings. It was young Billings, later editorial director of all publications at Time, Inc., who saved Redcliffe. He bought the deteriorating property from his uncle for $15,000 and restored it, retiring there in 1954. He gave it to the state of South Carolina in 1973.

The letters of this family provide interesting insights into the reaction of the participants to disaster on both the battlefield and the homefront. It presents a dramatic and coherent story, bringing out intrafamily dynamics, the relations between husbands and wives, brothers and sisters, and parents and children, as well as the especially strong bonds between mothers and daughters. Carol Bleser has selected about 200 of the 7,000 letters in the Hammond family archive to tell this interesting story.

—Harris D. Riley, Jr., MD
Oklahoma City

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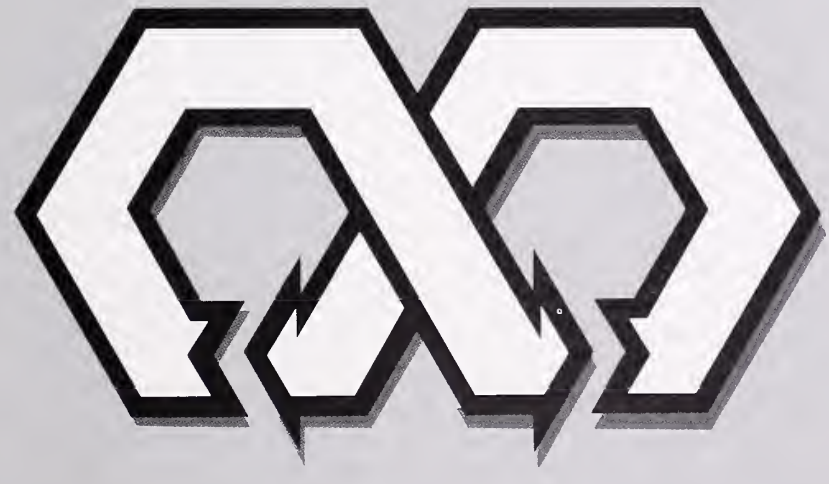

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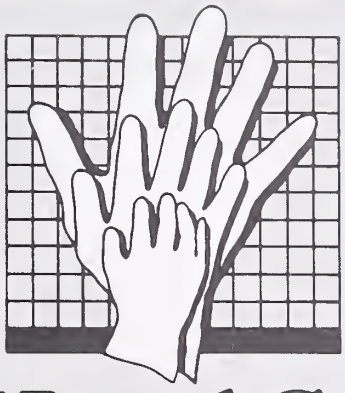

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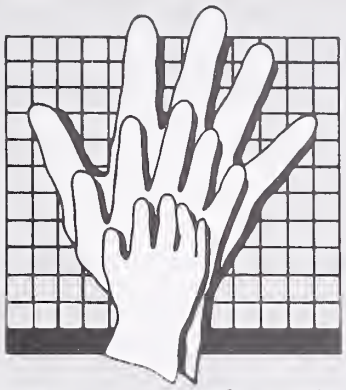

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INSTRUCTIONS FOR AUTHORS

Contributions

Articles submitted for publication, including Annual Meeting papers, become the sole property of the JOURNAL and must not have been published elsewhere. The Editorial Board reserves the right to edit any material submitted. Manuscripts must be typewritten, double-spaced, and submitted in duplicate. Receipt of manuscripts will be acknowledged, and unpublished manuscripts will be returned. The JOURNAL does not assume responsibility for the statements or opinions of any contributor.

Style

All manuscripts should adhere to the style adopted by the American Medical Association as illustrated in *JAMA* and detailed in the AMA's *Manual for Authors & Editors*. Footnotes, bibliographies, and legends for illustrations should be typewritten, double-spaced, on separate sheets. References are to be listed in the order of their appearance in the article.

Illustrations

Illustrations other than the author's will not be accepted for publication unless accompanied by written permission from the original source. Illustrations should be labeled with the author's name and must be numbered in the order in which they are referred to in the article. The quality of all illustrations must be in keeping with the quality of the magazine.

News

Readers are encouraged to submit news items of interest to Oklahoma physicians. Where dates of meetings, etc, are important, please remember that each issue closes on the first day of the *preceding* month and reaches subscribers in the latter half of the month of publication.

Reprints

Authors will receive reprint order forms from the Transcript Press, 222 East Eufaula, Norman, Oklahoma 73069, prior to publication of their articles. Other requests for reprints must be made to the Transcript Press within 30 days after publication.

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■ **The Oklahoma Foundation for Peer Review** (OFPR) has a new toll-free hot line for Oklahoma Medicare beneficiaries. Patients with questions or complaints about their hospitalization can get help by dialing 1-800-522-3414. OFPR's Community Outreach Department handles the hot line calls from 8 AM to 5 PM Monday through Friday. Callers in the Oklahoma City area may dial 840-2891. Medicare patients are urged to discuss their concerns with their doctor or a hospital administrator first, calling the hot line only if they remain dissatisfied.

■ **Dala R. Jarolim, MD, Tulsa, has been elected** to a two-year term as vice president of the Oklahoma Society of Internal Medicine. Dr Jarolim is associate professor and vice chair, Department of Medicine, University of Oklahoma Tulsa Medical College.

■ **The American Medical Association has recently** revised its 1988 *Reference Guide to Policy & Official Statements*. A limited number of the 70-page booklets are available to member physicians at no charge from the Oklahoma State Medical Association. The booklet covers a wide variety of topics, which are listed alphabetically for quick reference. Among the subjects discussed are abortion, acid rain, advertising and publicity, boxing, confidentiality, hypnosis, nuclear energy, organ transplantation guidelines, terminal illness, and unnecessary services. The new edition, a publication of the AMA Division of Communications, includes policies enacted and statements issued through Autumn 1988.

■ **Drs Boyd O. Whitlock, Ronald B. Saizow, and** Richard C. Slagle, Tulsa, have been elected to three-year terms on the Oklahoma Society of Internal Medicine/American College of Physicians Council. All are faculty members at the University of Oklahoma Tulsa Medical College.

■ ***The Business Side of Medical Practice* has been** newly revised and expanded and is now available from the American Medical Association. The 166-page book is designed to provide physicians with information needed to successfully start and manage a medical practice. Topics new to this edition are computers in the medical office and up-to-date information on the pros and cons of the various legal forms of organizing a practice. Other chapters focus on deciding how to practice, selecting the practice site, setting up an office, and deciding what kinds of insurance to carry. The book is available for $30 (20% discount for AMA members) from the AMA, Book and Pamphlet Fulfillment, PO Box 10946, Chicago, IL 60610-0946.

■ **A study in April's *Archives of Ophthalmology*** offers a positive review of the safety and effectiveness of radial keratotomy (RK) through five years of postsurgical follow-up. Authors Peter N. Arrowsmith, MD, of Nashville, Tenn, and Ronald G. Marks, PhD, of the University of Florida, Gainesville, studied 156 RK procedures. Uncorrected visual acuity before surgery was 20/200 or worse in 96% of the eyes studied. At five years, the authors say, 36% of the eyes had 20/20 vision or better and 75% were 20/40 or better. The results also appear to hold up over time; the authors say 85% of the eyes studied at five years retained at least 20/20 best corrected vision. "Although some patients still have shown refractive and visual acuity changes through five years after surgery, the overall group has been stable," they say.

■ **Autologous blood donation, depositing one's** own blood before elective surgery, has gained support in the medical community as the safest form of transfusion available. But a significant percentage of patients who might want to take advantage of this technique are unable to donate the full supply of blood they are likely to need due to hematocrit limitations, or insufficient red cell volume, a report in April's *Archives of Surgery* indicates. As a result, say authors Lawrence T. Goodnough, MD, and colleagues at Case Western Reserve University and University Hospitals of Cleveland, many such patients wind up using homologous blood (blood from other donors). The study involved 175 patients who began autologous donation for elective orthopedic surgery. Thirty patients (17%) were unable to provide the number of units of blood their surgeons requested because they could not sufficiently replenish their red cell supply over the short period of time between phlebotomies. However, the authors also found that a physician education program can correct the problem of surgeons not ordering enough autologous blood, thus reducing exposure to homologous blood in patients able to predeposit the number of units they are expected to need.

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Contraindications: VASOTEC® (Enalapril Maleate, MSD) is contraindicated in patients who are hypersensitive to this product and in patients with a history of angioedema related to previous treatment with an ACE inhibitor.

Warnings: *Angioedema:* Angioedema of the face, extremities, lips, tongue, glottis, and/or larynx has been reported in patients treated with ACE inhibitors, including VASOTEC. In such cases, VASOTEC should be promptly discontinued and the patient carefully observed until the swelling disappears. In instances where swelling has been confined to the face and lips, the condition has generally resolved without treatment, although antihistamines have been useful in relieving symptoms. Angioedema associated with laryngeal edema may be fatal. **Where there is involvement of the tongue, glottis, or larynx likely to cause airway obstruction, appropriate therapy, e.g., subcutaneous epinephrine solution 1:1000 (0.3 mL to 0.5 mL), should be promptly administered.** (See ADVERSE REACTIONS.)

Hypotension: Excessive hypotension is rare in uncomplicated hypertensive patients treated with VASOTEC alone. Heart failure patients given VASOTEC commonly have some reduction in blood pressure, especially with the first dose, but discontinuation of therapy for continuing symptomatic hypotension usually is not necessary when dosing instructions are followed; caution should be observed when initiating therapy (See DOSAGE AND ADMINISTRATION.) Patients at risk for excessive hypotension, sometimes associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death, include those with the following conditions or characteristics: heart failure, hyponatremia, high-dose diuretic therapy, recent intensive diuresis or increase in diuretic dose, renal dialysis, or severe volume and/or salt depletion of any etiology. It may be advisable to eliminate the diuretic (except in heart failure patients), reduce the diuretic dose, or increase salt intake cautiously before initiating therapy with VASOTEC in patients at risk for excessive hypotension who are able to tolerate such adjustments. (See PRECAUTIONS, *Drug Interactions* and ADVERSE REACTIONS.) In patients at risk for excessive hypotension, therapy should be started under very close medical supervision and such patients should be followed closely for the first two weeks of treatment and whenever the dose of enalapril and/or diuretic is increased. Similar considerations may apply to patients with ischemic heart disease or cardiovascular disease in whom an excessive fall in blood pressure could result in a myocardial infarction or cerebrovascular accident. If excessive hypotension occurs, the patient should be placed in supine position and, if necessary, receive an intravenous infusion of normal saline. A transient hypotensive response is not a contraindication to further doses of VASOTEC, which usually can be given without difficulty once the blood pressure has stabilized. If symptomatic hypotension develops, a dose reduction or discontinuation of VASOTEC or concomitant diuretic may be necessary.

Neutropenia/Agranulocytosis: Another ACE inhibitor, captopril, has been shown to cause agranulocytosis and bone marrow depression, rarely in uncomplicated patients but more frequently in patients with renal impairment, especially if they also have a collagen vascular disease. Available data from clinical trials of enalapril are insufficient to show that enalapril does not cause agranulocytosis at similar rates. Foreign marketing experience has revealed several cases of neutropenia or agranulocytosis in which a causal relationship to enalapril cannot be excluded. Periodic monitoring of white blood cell counts in patients with collagen vascular disease and renal disease should be considered.

Precautions: *General: Impaired Renal Function:* As a consequence of inhibiting the renin-angiotensin-aldosterone system, changes in renal function may be anticipated in susceptible individuals. In patients with severe heart failure whose renal function may depend on the activity of the renin-angiotensin-aldosterone system, treatment with ACE inhibitors, including VASOTEC, may be associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death.

In clinical studies in hypertensive patients with unilateral or bilateral renal artery stenosis, increases in blood urea nitrogen and serum creatinine were observed in 20% of patients. These increases were almost always reversible upon discontinuation of enalapril and/or diuretic therapy. In such patients, renal function should be monitored during the first few weeks of therapy.

Some patients with hypertension or heart failure with no apparent preexisting renal vascular disease have developed increases in blood urea and serum creatinine, usually minor and transient, especially when VASOTEC has been given concomitantly with a diuretic. This is more likely to occur in patients with preexisting renal impairment. Dosage reduction and/or discontinuation of the diuretic and/or VASOTEC may be required.

Evaluation of patients with hypertension or heart failure should always include assessment of renal function. (See DOSAGE AND ADMINISTRATION.)

Hyperkalemia: Elevated serum potassium (> 5.7 mEq/L) was observed in approximately 1% of hypertensive patients in clinical trials. In most cases these were isolated values which resolved despite continued therapy. Hyperkalemia was a cause of discontinuation of therapy in 0.28% of hypertensive patients. In clinical trials in heart failure, hyperkalemia was observed in 3.8% of patients, but was not a cause for discontinuation.

Risk factors for the development of hyperkalemia include renal insufficiency, diabetes mellitus, and the concomitant use of potassium-sparing diuretics, potassium supplements, and/or potassium-containing salt substitutes, which should be used cautiously, if at all, with VASOTEC. (See *Drug Interactions.*)

Surgery/Anesthesia: In patients undergoing major surgery or during anesthesia with agents that produce hypotension, enalapril may block angiotensin II formation secondary to compensatory renin release. If hypotension occurs and is considered to be due to this mechanism, it can be corrected by volume expansion.

Information for Patients:

Angioedema: Angioedema, including laryngeal edema, may occur especially following the first dose of enalapril. Patients should be so advised and told to report immediately any signs or symptoms suggesting angioedema (swelling of face, extremities, eyes, lips, tongue, difficulty in swallowing or breathing) and to take no more drug until they have consulted with the prescribing physician.

Hypotension: Patients should be cautioned to report lightheadedness especially during the first few days of therapy. If actual syncope occurs, the patients should be told to discontinue the drug until they have consulted with the prescribing physician.

All patients should be cautioned that excessive perspiration and dehydration may lead to an excessive fall in blood pressure because of reduction in fluid volume. Other causes of volume depletion such as vomiting or diarrhea may also lead to a fall in blood pressure; patients should be advised to consult with the physician.

Hyperkalemia: Patients should be told not to use salt substitutes containing potassium without consulting their physician.

Neutropenia: Patients should be told to report promptly any indication of infection (e.g., sore throat, fever) which may be a sign of neutropenia.

NOTE: As with many other drugs, certain advice to patients being treated with enalapril is warranted. This information is intended to aid in the safe and effective use of this medication. It is not a disclosure of all possible adverse or intended effects.

Drug Interactions.

Hypotension: Patients on Diuretic Therapy: Patients on diuretics and especially those in whom diuretic therapy was recently instituted may occasionally experience an excessive reduction of blood pressure after initiation of therapy with enalapril. The possibility of hypotensive effects with enalapril can be minimized by either discontinuing the diuretic or increasing the salt intake prior to initiation of treatment with enalapril. If it is necessary to continue the diuretic, provide close medical supervision after the initial dose for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and DOSAGE AND ADMINISTRATION.)

Agents Causing Renin Release: The antihypertensive effect of VASOTEC is augmented by antihypertensive agents that cause renin release (e.g., diuretics).

Other Cardiovascular Agents: VASOTEC has been used concomitantly with beta-adrenergic-blocking agents, methyldopa, nitrates, calcium-blocking agents, hydralazine, prazosin, and digoxin without evidence of clinically significant adverse interactions.

Agents Increasing Serum Potassium: VASOTEC attenuates potassium loss caused by thiazide-type diuretics. Potassium-sparing diuretics (e.g., spironolactone, triamterene, or amiloride), potassium supplements, or potassium-containing salt substitutes may lead to significant increases in serum potassium. Therefore, if concomitant use of these agents is indicated because of demonstrated hypokalemia, they should be used with caution and with frequent monitoring of serum potassium. Potassium-sparing agents should generally not be used in patients with heart failure receiving VASOTEC.

Lithium: A few cases of lithium toxicity have been reported in patients receiving concomitant VASOTEC and lithium and were reversible upon discontinuation of both drugs. Although a causal relationship has not been established, it is recommended that caution be exercised when lithium is used concomitantly with VASOTEC and serum lithium levels should be monitored frequently.

Pregnancy — Category C: There was no fetotoxicity or teratogenicity in rats treated with up to 200 mg/kg/day of enalapril (333 times the maximum human dose). Fetotoxicity, expressed as a decrease in average fetal weight, occurred in rats given 1200 mg/kg/day of enalapril but did not occur when these animals were supplemented with saline. Enalapril was not teratogenic in rabbits. However, maternal and fetal toxicity occurred in some rabbits at doses of 1 mg/kg/day or more. Saline supplementation prevented the maternal and fetal toxicity seen at doses of 3 and 10 mg/kg/day, but not at 30 mg/kg/day (50 times the maximum human dose).

Radioactivity was found to cross the placenta following administration of labeled enalapril to pregnant hamsters.

There are no adequate and well-controlled studies in pregnant women. VASOTEC® (Enalapril Maleate, MSD) should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers. Milk in lactating rats contains radioactivity following administration of ^{14}C enalapril maleate. It is not known whether this drug is secreted in human milk. Because many drugs are secreted in human milk, caution should be exercised when VASOTEC is given to a nursing mother.

Pediatric Use. Safety and effectiveness in children have not been established.

Adverse Reactions: VASOTEC has been evaluated for safety in more than 10,000 patients, including over 1000 patients treated for one year or more. VASOTEC has been found to be generally well tolerated in controlled clinical trials involving 298 patients.

Hypertension: The most frequent clinical adverse experiences in controlled trials were: headache (5.2%), dizziness (4.3%), and fatigue (3%).

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in controlled clinical trials were: diarrhea (1.4%), nausea (1.4%), rash (1.4%), cough (1.3%), orthostatic effects (1.2%), and asthenia (1.1%).

Heart Failure: The most frequent clinical adverse experiences in both controlled and uncontrolled trials were: dizziness (7.9%), hypotension (6.7%), orthostatic effects (2.2%), syncope (2.2%), cough (2.2%), chest pain (2.1%), and diarrhea (2.1%).

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in both controlled and uncontrolled clinical trials were: fatigue (1.8%), headache (1.8%), abdominal pain (1.6%), asthenia (1.6%), orthostatic hypotension (1.6%), vertigo (1.6%), angina pectoris (1.5%), nausea (1.3%), vomiting (1.3%), bronchitis (1.3%), dyspnea (1.3%), urinary tract infection (1.3%), rash (1.3%), and myocardial infarction (1.2%).

Other serious clinical adverse experiences occurring since the drug was marketed or adverse experiences occurring in 0.5% to 1% of patients with hypertension or heart failure in clinical trials in order of decreasing severity within each category.

Cardiovascular: Myocardial infarction or cerebrovascular accident, possibly secondary to excessive hypotension in high-risk patients (see WARNINGS, *Hypotension*); cardiac arrest, pulmonary embolism and infarction; rhythm disturbances, atrial fibrillation, palpitation.

Digestive: Ileus, pancreatitis, hepatitis or cholestatic jaundice, melena, anorexia, dyspepsia, constipation, glossitis.

Nervous/Psychiatric: Depression, confusion, ataxia, somnolence, insomnia, nervousness, paresthesia.

Urogenital: Renal failure, oliguria, renal dysfunction (see PRECAUTIONS and DOSAGE AND ADMINISTRATION), prostate hypertrophy.

Respiratory: Bronchospasm, rhinorrhea, asthma, upper respiratory infection.

Skin: Herpes zoster, pruritus, alopecia, flushing, photosensitivity.

Other: Muscle cramps, hyperhidrosis, impotence, blurred vision, taste alteration, tinnitus.

A symptom complex has been reported which may include fever, myalgia, and arthralgia, an elevated erythrocyte sedimentation rate may be present. Rash or other dermatologic manifestations may occur. These symptoms have disappeared after discontinuation of therapy.

Angioedema: Angioedema has been reported in patients receiving VASOTEC (0.2%). Angioedema associated with laryngeal edema may be fatal. If angioedema of the face, extremities, lips, tongue, glottis, and/or larynx occurs, treatment with VASOTEC should be discontinued and appropriate therapy instituted immediately. (See WARNINGS.)

Hypotension: In the hypertensive patients, hypotension occurred in 0.9% and syncope occurred in 0.5% of patients following the initial dose or during extended therapy. Hypotension or syncope was a cause for discontinuation of therapy in 0.1% of hypertensive patients. In heart failure patients, hypotension occurred in 6.7% and syncope occurred in 2.2% of patients. Hypotension or syncope was a cause for discontinuation of therapy in 1.9% of patients with heart failure. (See WARNINGS.)

Clinical Laboratory Test Findings:

Serum Electrolytes: Hyperkalemia (see PRECAUTIONS), hyponatremia.

Creatinine, Blood Urea Nitrogen: In controlled clinical trials, minor increases in blood urea nitrogen and serum creatinine, reversible upon discontinuation of therapy, were observed in about 0.2% of patients with essential hypertension treated with VASOTEC alone. Increases are more likely to occur in patients receiving concomitant diuretics or in patients with renal artery stenosis. (See PRECAUTIONS.) In patients with heart failure who were also receiving diuretics with or without digitalis, increases in blood urea nitrogen or serum creatinine, usually reversible upon discontinuation of VASOTEC and/or other concomitant diuretic therapy, were observed in about 11% of patients. Increases in blood urea nitrogen or creatinine were a cause for discontinuation in 1.2% of patients.

Hemoglobin and Hematocrit: Small decreases in hemoglobin and hematocrit (mean decreases of approximately 0.3 g % and 1.0 vol %, respectively) occur frequently in either hypertension or heart failure patients treated with VASOTEC but are rarely of clinical importance unless another cause of anemia coexists. In clinical trials, less than 0.1% of patients discontinued therapy due to anemia.

Other (Causal Relationship Unknown): In marketing experience, rare cases of neutropenia, thrombocytopenia, and bone marrow depression have been reported.

Liver Function Tests: Elevations of liver enzymes and/or serum bilirubin have occurred.

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Dosage and Administration: *Hypertension:* In patients who are currently being treated with a diuretic, symptomatic hypotension occasionally may occur following the initial dose of VASOTEC. The diuretic should, if possible, be discontinued for two to three days before beginning therapy with VASOTEC to reduce the likelihood of hypotension. (See WARNINGS.) If the patient's blood pressure is not controlled with VASOTEC alone, diuretic therapy may be resumed.

If the diuretic cannot be discontinued, an initial dose of 2.5 mg should be used under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and PRECAUTIONS, *Drug Interactions.*)

The recommended initial dose in patients not on diuretics is 5 mg once a day. Dosage should be adjusted according to blood pressure response. The usual dosage range is 10 to 40 mg per day administered in a single dose or in two divided doses. In some patients treated once daily, the antihypertensive effect may diminish toward the end of the dosing interval. In such patients, an increase in dosage or twice-daily administration should be considered. If blood pressure is not controlled with VASOTEC alone, a diuretic may be added.

Concomitant administration of VASOTEC with potassium supplements, potassium salt substitutes, or potassium-sparing diuretics may lead to increases of serum potassium (see PRECAUTIONS).

Dosage Adjustment in Hypertensive Patients with Renal Impairment: The usual dose of enalapril is recommended for patients with a creatinine clearance >30 mL/min (serum creatinine of up to approximately 3 mg/dL). For patients with creatinine clearance ≤30 mL/min (serum creatinine ≥3 mg/dL), the first dose is 2.5 mg once daily. The dosage may be titrated upward until blood pressure is controlled or to a maximum of 40 mg daily.

Heart Failure: VASOTEC is indicated as adjunctive therapy with diuretics and digitalis. The recommended starting dose is 2.5 mg once or twice daily. After the initial dose of VASOTEC, the patient should be observed under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and PRECAUTIONS, *Drug Interactions.*) If possible, the dose of the diuretic should be reduced, which may diminish the likelihood of hypotension. The appearance of hypotension after the initial dose of VASOTEC does not preclude subsequent careful dose titration with the drug, following effective management of the hypotension. The usual therapeutic dosing range for the treatment of heart failure is 5 to 20 mg daily given in two divided doses. The maximum daily dose is 40 mg. Once-daily dosing has been effective in a controlled study, but nearly all patients in this study were given 40 mg, the maximum recommended daily dose, and there has been much more experience with twice-daily dosing. In addition, in a placebo-controlled study which demonstrated reduced mortality in patients with severe heart failure (NYHA Class IV), patients were treated with 2.5 to 40 mg per day of VASOTEC, almost always administered in two divided doses. (See CLINICAL PHARMACOLOGY, *Pharmacodynamics and Clinical Effects.*) Dosage may be adjusted depending upon clinical or hemodynamic response. (See WARNINGS.)

Dosage Adjustment in Heart Failure Patients with Renal Impairment or Hyponatremia: In heart failure patients with hyponatremia (serum sodium <130 mEq/L) or with serum creatinine >1.6 mg/dL, therapy should be initiated at 2.5 mg daily under close medical supervision. (See DOSAGE AND ADMINISTRATION, *Heart Failure,* WARNINGS, and PRECAUTIONS, *Drug Interactions.*) The dose may be increased to 2.5 mg b.i.d., then 5 mg b.i.d. and higher as needed, usually at intervals of four days or more, if at the time of dosage adjustment there is not excessive hypotension or significant deterioration of renal function. The maximum daily dose is 40 mg.

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JULY 1989

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ABOUT THE COVER

OSMA delegate enjoys a quiet moment in the atrium of Tulsa's Sheraton Kensington Hotel, site of this year's Annual Meeting.

Photograph by Susan Records
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Stretched to Your Limits?

Meeting the demands placed on today's busy medical professionals can be real torture, especially when annoying details like paperwork and personnel problems get in the way of practicing medicine. Doctors who try to double as office managers and bookkeepers soon feel like they are splitting at the seams.

When you find yourself racking your brain for a good alternative to your current office system, pull yourself together and call Professional Office Management, the practice management specialists. They can loosen the pressure by taking care of your business while you take care of patients.

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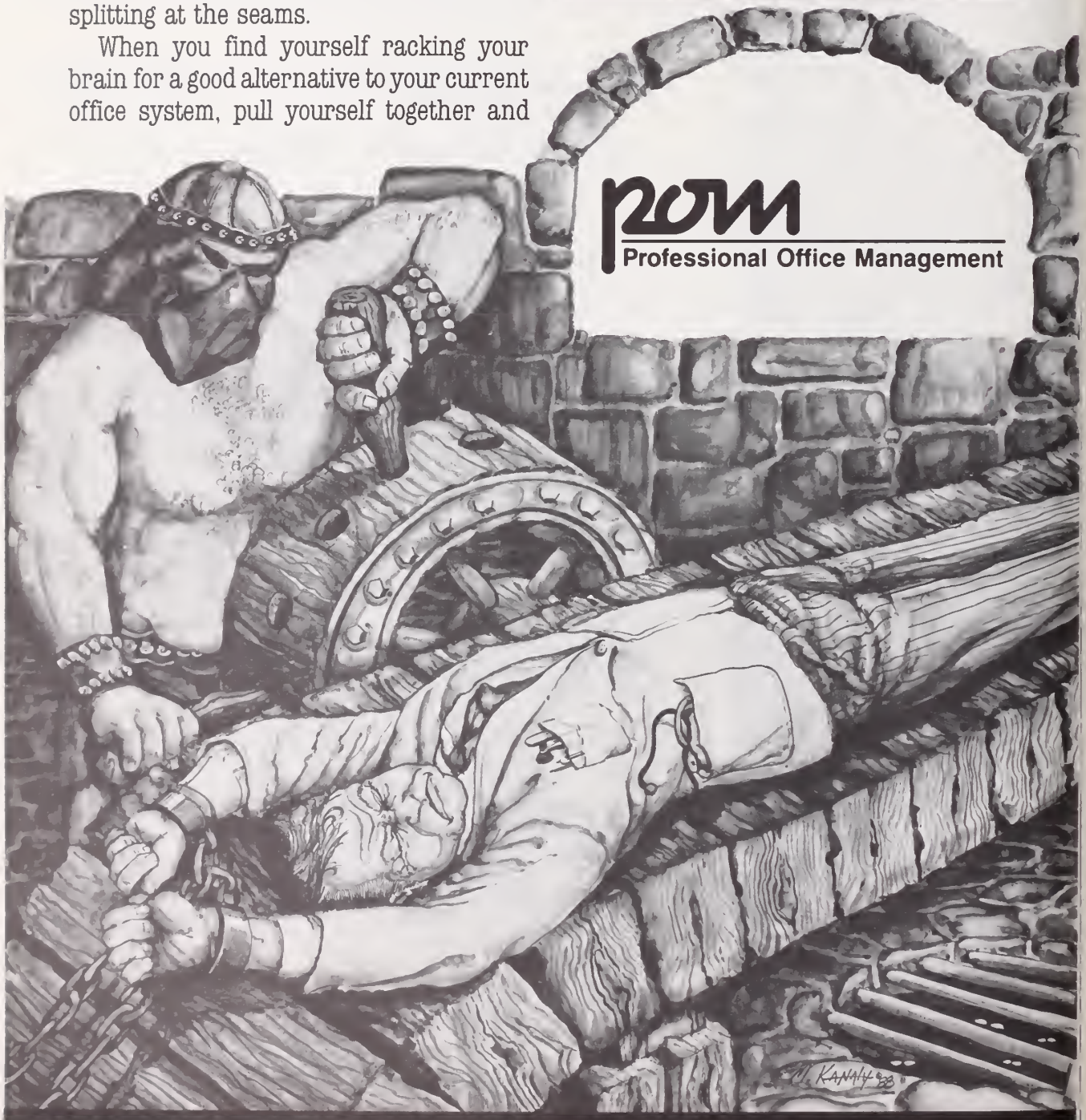

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How Much Is a Physician Worth?

To the person choked on a piece of meat in the larynx, there is no price too great to pay for a clear airway; absent oxygen, the need for material possessions will soon cease forever. In the ordinary course of medical practice, patients with cancer and serious infections often present similar but less urgent crises. In a moral society, the ethical physician abstains from extortion and does not demand money in exchange for life, like an alley mugger. Rather, the true physician justifies a stipend by dedicating time and skill to the patient's health needs.

At the other extreme of the medical spectrum, the needs of the healthy but worried patients are a quandary, and the ethicist might ask if the good physician may ask a fee for advising a patient whom time alone will heal. The equitable answer is that it is the time committed to the benefit of the patient that justifies a fee and not the uncertain effect of the advice on the patient's morbid process.

By thoughtful consideration of these dilemmas, we see again that physicians do not sell life or health or scalpel strokes. The true physicians sell time that is made significant by skillful judgment.

How many dollars in take-home pay is a skillful, full-time dedicated physician worth today? Thirty years ago, free market forces gave an accurate answer. Unfortunately, in America today, the marketplace determination of the physician's worth has been disrupted by congressional meddling and Medicare regulations, and today's patients have become uncertain.

A rational social policy would surely be that the physician be paid an amount sufficient to attract the best and brightest young people into the profession. Medical care is now an extremely important service; in a free, nonsocialist society, pay will be proportional to the importance of the provided service.

But our American society shows ambivalence to the medical options of today. Our citizens eagerly buy coronary bypasses for themselves, but as taxpayers, refuse to buy them for their brothers on welfare. As ticket-buyers, our citizens avidly pay our entertainers and football players a million dollars a year, but are envious if the physician earns more dollars than his neighbors.

Our Congress has already disrupted the free medical marketplace and now is reaching for the right to determine how much physicians are to be paid. The Resource Based Relative Value Scale linked to Medicare may be used to that end. When that right has legally been grasped, does anyone think physicians will be paid more than Congressmen?

The physician's worth and the physician's pay should be determined by free citizens buying medical services in a free enterprise market.

Ray V. McIntyre, M.D.

Losing Our Independence?

This is the month we celebrate our independence as a country and as a people. Our nation has been blessed. This has been brought to our attention, more than usual, by the events in China, Poland, and the USSR in recent months.

It seems somewhat impertinent for me to say, "I'm proud to be an American." It was purely an accident of birth for me; I actually had nothing to do with it. Deep in my heart, however, I can say that I am grateful to be a resident of this land.

Robert Orben says that the essence of America can be summed up in this exchange: A father told his son that all Americans belong to a privileged class. The son said, "I disagree," and the father said, "That's the privilege."

The Fourth of July, however, can be a dangerous day, not because of the fireworks, reckless driving, swimming accidents, and such. It is a dangerous holiday because it can blind us to our real needs. At a time to celebrate independence, we, as a profession, are seeing our independence dwindle away. It seems paradoxical that what is frequently thought of as the most honored of professions would be the target of "independence decay." Government is slowly and progressively removing what we have in the past considered to be free enterprise. Certainly, almost everyone would agree that changes were in order, particularly in the area of financing of health care. There are limited funds available for government to pay for health care benefits.

So far, Congress has not been able to admit that the promise of benefits for everyone is not a realistic goal and that only limited funds are available. This is a form of national denial. Most people refuse to believe that there is no political equivalent of a mother's kiss that will make everything all better.

The principle that many accept to support this trend is expressed by the aphorism "health care is not a privilege, it's a right." While this phrase seems to express concern for others, it is actually a rejection of the idea that human compassion is worthy of gratitude. It cheapens the concept of natural rights that our country was founded on and reduces personal charity to the act of paying taxes that are spent on government programs that don't work. We frequently observe that government cannot cure, and actually aggravates many social ills when its programs or solutions are attempted.

I agree with Patrick Cox who stated, "Health care is neither a right nor a privilege. It is a product like any other, but bureaucratic health care is neither healthy nor caring."

There are many responsibilities that go with independence and freedom. Democracy is hard work and requires constant vigilance. It is never guaranteed and must be earned by citizens who are involved, concerned, and participating. We should never take anything for granted, and we have to continue our constant efforts to maintain our independence.

The Efficacy of Ground versus Helicopter Transport in Patient Outcome

Jack Payton Campbell, MD; Ronald Bruce Low, MD; Debbi Bowman, RN

Rising medical costs and the push for cost containment have led many to examine the expense of providing helicopter emergency transport. Is its potential worth the cost?

Rising medical costs and the push for cost containment have led many to examine the expense of providing helicopter emergency transport. It has the potential for providing rapid, efficient movement to medical care. However, its potential misuse as an "air taxi service" or a "flying billboard," as well as its unacceptably high crash rate, has caused it to come under close scrutiny. At the Oklahoma Medical Center (OMC), the air transport unit is called Medi Flight. For the above reasons, as well as because of budget restraints, we have chosen to compare the Medi Flight unit with outlying ground ambulance units in regard to efficacy of patient outcome. Is its potential worth the cost?

In an effort to compare patients equally, we considered several patient evaluation scores. Many prehospital scores have been utilized in assessing patients. Most deal with the trauma patient (eg, Trauma Score, Prehospital Index). During this study we attempted to adapt the APACHE II (acute physiologic and chronic health evaluation)[1] score to the emergency room setting in order to evaluate both trauma and nontrauma patients. We also utilized the TISS (therapeutic intervention scoring system)[2] in an effort to compare the amount of intervention patients received.

We attempted to relate the TISS and the APACHE II to the patients outcome and probability of death. The type and severity of illness of patients transported by ground versus air transport was closely scrutinized.

Methods

Emergency room records from January 1986 to March 1987 were reviewed. Criteria for patient inclusion in the study were (1) the patient had to have been transported from an outlying hospital emergency department (not an Oklahoma City hospital emergency department) to Oklahoma Memorial Hospital (OMH) by either ground ambulance (GR) or Medi Flight (MF), (2) the patient had to have been admitted to Oklahoma Memorial Hospital after arrival, and (3) no flights from emergency scenes were considered because data from referring emergency departments were necessary to calculate APACHE II scores.

By reviewing the information from emergency departments, emergency medical services' "run" records, Medi Flight "flight" records, and Oklahoma Memorial Hospital emergency department records, TISS and APACHE II scores were calculated. Those TISS scores calculated for the referring hospitals were labeled RTISS, those for the transport system were labeled TTISS, and those for the Oklahoma Memorial Hospital emergency department were labeled OTISS. APACHE II scores for the referring

Direct correspondence to J.P. Campbell, MD, Assistant Professor, Section of Emergency Medicine, PO Box 26307, Oklahoma City, OK 73126.

Table 1. Therapeutic Intervention Scoring System Scores

		RTISS	TTISS	OTISS
GR	NE	N=57 M=4.31 R=0-11	N=57 M=2.86 R=0-11	N=57 M=6.93 R=0-11
	EXP	N=3 M=7.00 R=2-10	N=3 M=3.33 R=1-6	N=3 M=10.67 R=5-20
	COMB	N=60 M=4.45 R=0-11	N=60 M=2.88 R=0-11	N=60 M=7.11 R=0-20
MF	NE	N=47 M=9.40 R=0-30	N=47 M=9.83 R=2-29	N=47 M=11.79 R=3-36
	EXP	N=11 M=14.91 R=2-30	N=11 M=15.82 R=5-29	N=11 M=25.09 R=5-41
	COMB	N=58 M=10.45 R=0-30	N=58 M=10.97 R=2-29	N=58 M=14.31 R=3-41

GR = Ground Transport
MF = Medi Flight
NE = Nonexpired
EXP = Expired
COMB = Combined Expired/Nonexpired
N = Number of patients
M = Mean
R = Range
RTISS = Referring Hospital Therapeutic Intervention Scoring System
TTISS = Transport Method Therapeutic Intervention Scoring System
OTISS = Receiving Hospital Therapeutic Intervention Scoring System

Table 2. Acute Physiologic and Chronic Health Evaluation (APACHE II) Scores

		PRAPACHE	POAPACHE
GR	NE	N=8 M=9.13 R=3-25	N=54 M=6.70 R=0-30
	EXP	N=2 M=11.00 R=7-15	N=3 M=18.67 R=5-34
	COMB	N=10 M=9.50 R=3-25	N=57 M=7.37 R=0-34
MF	NE	N=3 M=14.00 R=12-15	N=47 M=7.89 R=0-34
	EXP	N=0 M=0.00 R=0-0	N=8 M=21.13 R=9-36
	COMB	N=3 M=14.00 R=12-15	N=55 M=9.82 R=0-36

GR = Ground Transport
MF = Medi Flight
NE = Nonexpired
EXP = Expired
COMB = Combined Expired/Nonexpired
N = Number of patients
M = Mean
R = Range
PRAPACHE = Referring Hospital APACHE II Score
POAPACHE = Receiving Hospital APACHE II Score

hospitals were labeled PRAPACHE and for the receiving hospital (OMH), POAPACHE. Relationships of APACHE II and TISS scores to patient outcome and method of transport were explored.

Results

A total of 118 patients met the above criteria and were included in the study. Of these, 60 had been transported by ground (GR) and 58 had been transported by Medi Flight (MF). After arrival at Oklahoma Memorial Hospital, 3 of 60 ground transport patients expired, and 11 of 58 Medi Flight patients expired. No patients expired in transport.

Table 1 compares the TISS scores of the referring hospital (RTISS), the transport system (TTISS), and the receiving hospital (OTISS). Further comparison is made in categories of patients transported by ground or Medi Flight.

Table 2 compares APACHE II scores of ground and Medi Flight transport for the referring hospital (PRAPACHE) and the receiving hospital, OMH (POAPACHE). APACHE II calculations and comparisons of expired (EXP) and nonexpired (NE) patients to the method of transport are shown.

Table 3 compares the average miles per hour to the method of transportation and the patient outcome. The mean miles per hour by ground transport was 57.20 and for air transport was 124.21.

Table 4 combines both methods of transport (GR + MF) and compares the mean scores of the expired and nonexpired patients. It also shows the T-test approximate significance of differences in the mean scores between the two sets of patients. The mean scores of the expired patients are all higher than the nonexpired patients, although in some cases the difference is not statistically significant.

Table 5 lists the number of referring hospital APACHE II scores that could be calculated.

Discussion

There has been much discussion in the medical literature[3-5] and the lay press (eg, "20/20" program "Angels of Mercy or Machines of Death") concerning air ambulance services. For the most part, there is agreement that air transport of critically ill patients and the expertise usually provided to the patients by the medical flight teams can be invaluable. The difficulty is in determining which patients can

Table 3. Average Speed of Transport (Miles Per Hour)

	Expired	Nonexpired	Combined
GR	N = 2 M = 49.28 R = 47.56-51.00	N = 21 M = 57.95 R = 48.00-78.46	N = 23 M = 57.20 R = 47.56-78.46
MF	N = 11 M = 121.35 R = 107.36-136.00	N = 47 M = 124.87 R = 90.00-165.88	N = 58 M = 124.21 R = 90.00-165.88

GR = Ground Transport
MF = Medi Flight

N = Number of patients
M = Mean
R = Range

Table 4. Comparison of Scores for Ground and Medi Flight Transport

1. **N = 118**
   RTISS score = Mean score expired > nonexpired
   p = 0.0035
   TTISS score = Mean score expired > nonexpired
   p = 0.0029
   OTISS score = Mean score expired > nonexpired
   p = 0.0003
2. **N = 13**
   PRAPACHE score = Mean score expired > nonexpired
   p = 0.7704
   PBDAPPR score = Mean score expired > nonexpired
   p = 0.1645
3. **N = 112**
   POAPACHE score = Mean score expired > nonexpired
   p = 0.0001
   PBDAPPO score = Mean score expired > nonexpired
   p = 0.0001

N = number of patients
RTISS = Referring Hospital Therapeutic Intervention Scoring System
TTISS = Transport Method Therapeutic Intervention Scoring System
OTISS = Receiving Hospital Therapeutic Intervention Scoring System
PRAPACHE = Referring hospital APACHE II score
POAPACHE = Receiving hospital APACHE II score
PBDAPPR = Predictive probability of death from the referring hospital APACHE II score
PBDAPPO = Predictive probability of death from the receiving hospital APACHE II score

Table 5. Completed Referring Hospital APACHE II Scores

Ground	Medi Flight
Nonexpired N = 8	Nonexpired N = 3
Expired N = 2	Expired N = 0
Combined N = 10	Combined N = 3

benefit from air transport over ground transport. Many prehospital triage scores have been developed and tested,[5-10] with varying outcomes. Most, however, deal with the trauma patient, leaving the triage of the critically ill, nontrauma patient to some other mechanism of triage.

The APACHE II score[1] has been used successfully in determining the severity of disease and as a prognostic indicator in the intensive care unit (ICU) patient.[11] A modification of APACHE II, the "sickness score," has been used for assessing the transport of critically ill patients between hospitals.[12]

In attempting to use the APACHE II score in this study, we soon found a problem of incomplete variables from the referring hospitals. Determining the score requires a complete set of vital signs, a hematocrit, a white blood cell count, and serum sodium, potassium, creatinine, and bicarbonate levels. The last value is used if no arterial blood gas levels are available. A Glascow Coma Score completes the Acute Physiology Score of the APACHE II.

Table 5 shows the patient numbers from these hospitals. Only 13 of a possible 118 cases from referring hospitals contained enough data (vital signs, laboratory values) to complete the APACHE II score. The most commonly omitted variable was the patient's temperature. Oftentimes the laboratory work needed to complete the score was not done at the referring hospital. All too often, if the patient was critical and/or was to be transported by Medi Flight, little or no laboratory work was done and consequently no score could be calculated (Table 2, Table 6 [Expired GR: N = 2; Expired MF: N = 0]). APACHE II scores determined at Oklahoma Memorial Hospital also lacked data, with the patient's temperature again being the most frequent omission.

The Oklahoma Memorial Hospital mean APACHE II scores for the expired patients (Table 2: 18.67 GR vs 21.13 MF) corresponds with findings of Bion, et al,[12] in that persons with scores greater than or equal to 19 invariably died. Comparing the mean APACHE II scores for the nonexpired patients (Table 2: 6.7 GR vs 7.89 MF) reveals a greater chance of survival. In using the weighted values for predicting the probability of dying[1] and combining the methods of transport (N = 107), the mean score of the expired patient is greater than that of the nonexpired patient, with the T-test approximate significance being 0.0001 (Table 4). These findings may suggest that the APACHE II can be used to predict fatal outcome that occurs despite resuscitative efforts. This may stem from the patient's reaching such a degree of physiologic derangement that damage is irreversible.[12]

TISS (therapeutic intervention scoring system) has been used previously in the measure of helicopter emergency medical services.[2] We applied the TISS to the referring hospital (RTISS), the transport method

(TTISS), and the receiving hospital (Oklahoma Memorial Hospital, OTISS). Table 1 compares the outcomes of the TISS scores. The OTISS score is greater than the RTISS score for both ground and air transport. This suggests a need for patients requiring greater intervention to be referred to the tertiary care center. Further scrutiny reveals the Medi Flight patients had higher RTISS and OTISS scores than those transported by ground. This implies that patients requiring greater intervention were usually transported by Medi Flight.

A comparison of the amount of intervention from the referring hospital (RTISS) to the amount of intervention by the transport system (TTISS) suggests that Medi Flight transports patients who have required greater referring hospital intervention. It also shows clearly that the amount of intervention supplied by the Medi Flight unit is greater than that of the ground units. Many times the rural communities have only basic Emergency Medical Technicians (EMTs) available on the ambulance. One may think that perhaps Medi Flight is too aggressive in its interventions. However, a comparison of the combined (expired and nonexpired) RTISS, TTISS, and OTISS mean scores for Medi Flight transport in Table 1 shows that even *more* intervention was done *after* arrival to the tertiary center. This contrasts with the mean RTISS, TTISS, and OTISS scores for ground transport, which show a decrease in intervention during transport.

The relationship between the TISS and patient survival rate was explored. Table 1 shows that for patients who expired (whether transported by ground or air), a greater TISS score was accumulated. Table 4 shows these differences to be statistically significant. However, we were unable to show a direct relation between X (TISS score) and Y (probability of dying).

Table 3 shows the average miles per hour for Medi Flight and ground transports. As expected, the Medi Flight average miles per hour is greater than that for ground transport, 2.17 times greater. However, in view of the "round trip" of Medi Flight versus the "one way" of ground transport, Medi Flight does not offer that much advantage in speed.

Reviewing Table 4, it seems that the referring hospital APACHE II scores (PRAPACHE) and the predictive probability of death using the APACHE II scores (PBDAPPR) do not reflect the same predictive values as those calculated at the receiving hospital (POAPACHE and PBDAPPO). In reference to Tables 2 and 5, this difference is probably a result of the extremely small numbers of scores that could be calculated from the referring hospitals (GR: exp N = 2 and MF: exp N = 0).

Conclusion

The need for Medi Flight versus ground transport appears to be determined by the amount of intervention thought necessary and many times initiated at the referring hospital. Although transport speed does not seem to be a factor in patient outcome, the greater intervention of the flight team in caring for the critically ill patient does.

The APACHE II scores may suggest a degree of predictability of patient outcome in the emergency department setting. Unfortunately, the number of variables makes it difficult to apply the scores in the rural hospital emergency department (eg, patient temperature is an important vital sign and should be noted). The TISS scores serve as a measure of the level of emergency medical intervention in patient care.

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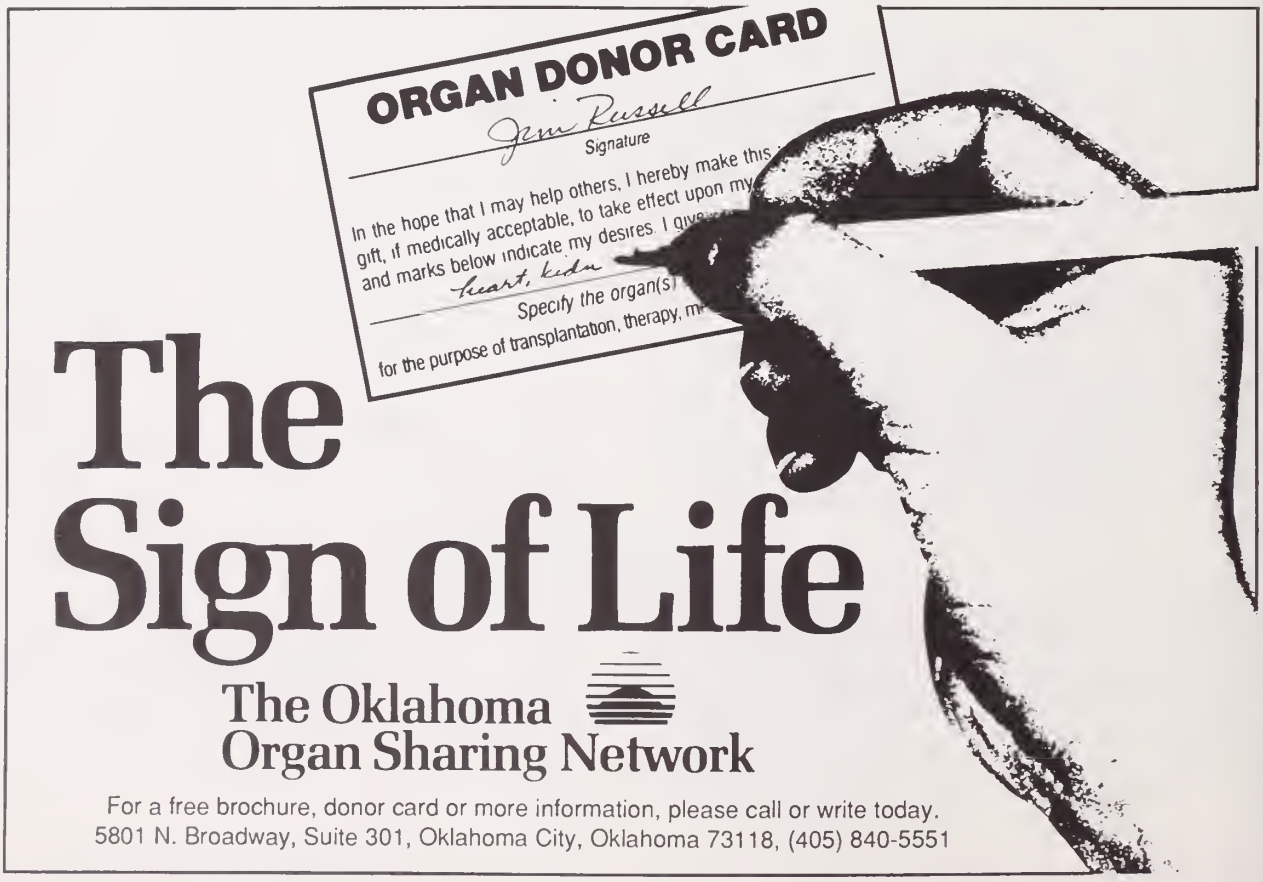

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News from the Oklahoma State Department of Health

"Due By Two" Campaign

In May 1987, the staff of the Oklahoma State Department of Health's Immunization Division began collecting data from the active files of 2-year-old children who had been seen in local county health departments. This data, along with data collected from the annual retrospective surveys on school and day care attendees, indicated unacceptably low immunization levels of 36% among these 2-year-old children. These results have provided the necessary impetus to increase awareness and gather support to raise the immunization levels of Oklahom's 2-year-old population. This resulted in 13% of Oklahoma's county health departments instituting active immunization recall programs.

In 1988, the Oklahoma State Department of Health joined the national initiative to encourage 2-year age-appropriate immunizations. Oklahoma's campaign, "Due By Two," is designed to target parents of infants and preschool-age children and encourage them to have their child's basic immunizations completed by age 2. The campaign's goal is to raise the 2-year age-appropriate immunization level to 90% by the end of calendar year 1990.

The effects of a month-long media campaign last June, combined with the distribution of brochures and stickers, provided a framework on which to build a broad scale public awareness campaign. Similar activities will be implemented this summer.

The "Due By Two" campaign incorporates both the public and private medical sectors to include pediatricians, family physicians, and general practitioners. The campaign coalition includes the Department of Human Services and AFDC recipients, social workers, and other civic and community organizations. The goal is to reach the parents of Oklahoma's 2-year-old population.

During 1991, evaluations will be conducted utilizing Behavioral Risk Factor Surveillance (BRFS) telephone studies and data collection of active 2-year-old records in county health departments. The data collected will be compared to the 36% level documented prior to the "Due By Two" campaign.

For more information about the "Due By Two" campaign, or to order materials, contact the Immunization Division, 405/271-4073.

DISEASE	Monthly Reporting Period Ending 4/30/89	TOTAL TO DATE		
		This Year	Last Year	5 Yr. Avg.
ACQUIRED IMMUNE DEFICIENCY SYNDROME	8	46	44	7
CAMPYLOBACTER INFECTIONS	18	45	38	52
CHLAMYDIA INFECTIONS	232	787	881	#
ENCEPHALITIS, INFECTIOUS	1	6	6	7
GIARDIA INFECTIONS	9	46	46	56
GONORRHEA (Use ODH Form 228)	433	2125	2355	3426
HAEMOPHILUS INFLUENZAE INVASIVE DISEASE	23	68	86	78
HEPATITIS A	28	142	232	159
HEPATITIS B	14	59	75	70
HEPATITIS, NON-A NON-B	1	9	18	18
HEPATITIS UNSPECIFIED	1	8	14	24
HUMAN IMMUNODEFICIENCY VIRUS INFECTIONS	37	147	*	*
MENINGITIS, BACTERIAL (non-meningococcal, non H. Influenzae)	18	48	7	20
MENINGOCOCCAL INFECTIONS	1	7	8	13
MUMPS	18	140	134	—
PERTUSSIS	0	8	25	49
RABIES (ANIMAL)	13	34	14	25
ROCKY MOUNTAIN SPOTTED FEVER	0	1	2	5
SALMONELLA INFECTIONS	32	92	81	92
SHIGELLA INFECTIONS	9	38	41	51
SYPHILIS (Use ODH Form 228)	6	29	52	56
TUBERCULOSIS	33	60	66	72
TULAREMIA	0	2	3	2

#Made Reportable in 1985 —Made Reportable in 1987 *Made Reportable in 1988

Injuries	Total to Date This Year	Fatalities No. (%)
BURN	153	43 (28)
TRAUMATIC SPINAL CORD INJ	28	9 (32)
DROWNING/ NEAR DROWNING	21	18 (86)

Diseases of Low Frequency	Total to Date This Year
AMEBIASIS	0
BRUCELLOSIS	2
LEGIONNAIRES' DISEASE	10
MALARIA	1
MEASLES (RUBEOLA)	0
REYE SYNDROME	0
RUBELLA	1
TETANUS	0
TOXIC SHOCK SYNDROME	5
TYPHOID FEVER	0

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AMA delegates, PLICO board named

OSMA House of Delegates elects new officers at Tulsa meeting

President John R. Alexander, MD, a Tulsa internist, heads the slate of 1989-90 officers of the Oklahoma State Medical Association (OSMA).

Also elected at the association's Annual Meeting, held May 4-6 at the Sheraton Kensington Hotel in Tulsa, were Perry A. Lambird, MD, Oklahoma City, president-elect, and Billy Dale Dotter, MD, Okeene, vice-president. James D. Funnell, MD, Oklahoma City, was re-elected secretary-treasurer.

Re-elected to their respective positions as chair and vice-chair of the OSMA Board of Trustees were Jerry L. Puls, MD, Tulsa, and Sara R. DePersio, MD, Oklahoma City.

Newly elected delegates to the American Medical Association (AMA) are George H. Kamp, MD, Tulsa, and William O. Coleman, MD, Oklahoma City. Incumbents Ed L. Calhoon, MD, Beaver, and Michael J. Haugh, MD, Tulsa, were re-elected.

The new alternate delegates to the AMA are Norman L. Dunitz, MD, Tulsa; Jay A. Gregory, MD, Muskogee; and Dr DePersio. Gary F. Strebel, MD, Oklahoma City, was re-elected to his position as alternate delegate.

The election for the Board of Directors of the Physicians Liability Insurance Company (PLICO) was held during the Closing Session of the House of Delegates. Retained on the board were Ray V. McIntyre, MD, Kingfisher; Billy R. Goetzinger, MD, Oklahoma City; Floyd F. Miller, MD, Tulsa; and Drs Alexander and Calhoon.

PLICO directors

Association members attend May meeting of physician insurors

Eleven Oklahoma physicians attended the annual meeting of the Physician Insurors Association of America in Boston May 17-19.

The physicians, members of the Board of Directors of the Physicians Liability Insurance Company (PLICO), joined several executives of C.L. Frates and Company to attend conferences on insurance company management, loss prevention, and liability claims management.

Senator Orrin Hatch, American Medical Association President James E. Davis, MD, and AMA Vice-President James S. Todd, MD, addressed the Physician Insurors Association membership on problems affecting the medical profession and physicians insurance companies.

In attendance from Oklahoma were C. Alton Brown, MD, William O. Coleman, MD, James B. Eskridge III, MD, and B.R. Goetzinger, MD, Oklahoma City; Billy D. Dotter, MD, Okeene; Joseph Hester, MD, Muskogee; C.S. Lewis, Jr., MD, and Floyd F. Miller, MD, Tulsa; John A. McIntyre, MD, and David M. Selby, MD, Enid; and Ray V. McIntyre, MD, Kingfisher.

Edward Kelsay, Esq, general counsel for the Oklahoma State Medical Association, and David Bickham, OSMA executive director, also attended the conference.

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AMA to teach preventive politics at Washington, DC, conference

"Preventive Politics: Preparing for the 1990s" is the title of the American Medical Association's 1989 Political Education Conference, and Oklahomans who wish to attend are encouraged to begin planning now.

The Washington, DC, conference on October 4 and 5 is designed to teach members of the medical community how to take effective political action in defense of their profession. The meeting will address current concerns and provide relevant, substantive experience.

Special sessions will teach grass roots techniques, public speaking, "get-out-the-vote" efforts, and coalition building, as well as provide legislative information necessary to becoming an informed and politically valuable member of the medical community.

In addition, a private Congressional Reception on Capitol Hill will offer numerous legislative and political contacts, and state medical associations will be arranging individual appointments with their state's elected officials.

Members of Oklahoma's medical community who would like to attend the conference should call Oklahoma Medical Political Action Committee (OMPAC) Director Robert W. Baker at 1-800-522-9452 or 1-405-843-9571 for registration information.

Four from Tulsa

OSMA trustees meet in Tulsa, approve ten new Life Members

At its May 4 meeting in Tulsa, the Oklahoma State Medical Association's Board of Trustees approved ten applications for Life Memberships.

The new Life Members from Tulsa are Donald L. Brawner, MD; George R. Krietmeyer, MD; Robert T. Rounsaville, MD; and Theodore Turnbull, MD.

Also approved were Everette E. Cooke, MD; Myron A. Cordum, MD; and A.C. Lisle, Jr., MD, of Oklahoma City, as well as Ethan A. Walker, Jr., MD, formerly of Oklahoma City.

New Life Members from other parts of the state are Jesse S. Little, MD, Norman, and Walter Wicker, MD, Kingston.

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DEATHS

Robert Sears Davis, Jr., MD
1924 - 1989

Retired Chickasha internist Robert S. Davis, Jr., MD, died May 13, 1989. Dr Davis, an OSMA Life Member and native of Davis, Okla, was graduated from the University of Oklahoma School of Medicine in 1954. Upon completion of his residency training, he established his first practice in Sulphur, moving to Chickasha some twelve years later.

IN MEMORIAM

1988

Hugh Albert Stout, MD	May 7
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John Ralph Rafter, MD	August 1
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John Copeland Pickard, MD	August 31
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Loyd Lee Long, Jr., MD	December 6
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1989

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Alexander Shadid, MD	February 2
Moorman Paul Prosser, MD	February 12
Robert Vern Weger, MD	February 18
William Lawrence Bond, MD	March 26
Mary Edna Sippel, MD	April 10
Ruben Hilton Mayberry, MD	April 20
Norman Eugene Dearnbarger, MD	May 6
Gordon Kent Jimerson, MD	May 6
Robert Sears Davis, Jr., MD	May 13
James Richard Riggall, MD	May 30

Norman Eugene Dearnbarger, MD
1935 - 1989

Norman E. Dearnbarger, MD, Durant radiologist, died May 6, 1989. A 1963 graduate of the University of Illinois at Chicago Health Sciences Center, Dr Dearnbarger was born in Chesterville, Ill. He served in the US Army from 1965 to 1971, attaining the rank of major, before starting his practice in Oklahoma in 1972.

Gordon Kent Jimerson, MD
1939 - 1989

Norman physician Gordon K. Jimerson, MD, an obstetrician-gynecologist, died May 6, 1989. A 1964 graduate of the University of Oklahoma College of Medicine, Dr Jimerson was born in Lincoln, Neb. From 1971 to 1977 he was an associate professor at the university and in 1977 moved to Norman to enter private practice.

Ruben Hilton Mayberry, MD
1925 - 1989

OSMA Life Member Ruben H. Mayberry, MD, Ardmore public health specialist, died April 20, 1989. Dr Mayberry was a native of Westville, Okla, and a 1950 graduate of the University of Louisville (Kentucky) School of Medicine. He later obtained a master's degree in public health administration and worked in Wewoka and Holdenville before settling in Ardmore in 1964.

James Richard Riggall, MD
1922 - 1989

James R. Riggall, MD, retired Oklahoma City surgeon and OSMA Life Member, died May 30, 1989. The Rushville, Ill, native earned his medical degree at Baylor College of Medicine, Houston, Tex, in 1951 after serving in the US Navy from 1944 to 1946. He established a private practice in Oklahoma City in 1958 and was an associate professor at the University of Oklahoma Health Sciences Center.

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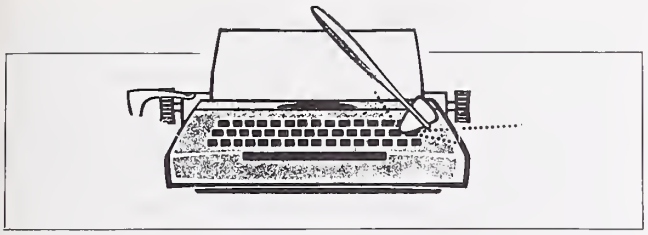

Editor-in-chief draws fire for stand on state employees' PPO

To the Editor: I feel moved to respond to your editorial, "Created Equal" [May 1989].

I can easily understand the concern of private physicians in the Greater Oklahoma City area about being excluded from the State and Education Employees Group Insurance Program (the "PPO"). I agree that this situation was not handled properly and should be rectified. On the other hand, your "sour grapes" editorial was certainly an extreme response.

You must surely realize that the State of Oklahoma does not have unlimited resources, especially in our current era of low oil prices. The State does, however, accept its obligation to provide health care assistance for its employees and is doing what it can to balance these two considerations. Maybe the method is somewhat flawed but the intent is laudable (at least from the standpoints of the taxpayer and the state employee).

I have agreed to participate in the PPO. I am in Family Practice and since I take very few new patients, I will not be "provided a stream of patients on whom I do not have to merit referral." I will simply be able to save my patients some of their hard-earned money. I don't do "procedures" and therefore most of my PPO visits are for routine on-going office care. Even if I did not participate, my patients would still come for these visits. (It would not be worthwhile to drive ninety miles to Oklahoma City to save two dollars on an office visit!) By participating in the PPO, I have accepted a 12% reduction in my usual fees for the sake of my patients, most of whom make substantially less than I do. After all, when the lust for money replaces patient health *and compassion* as the lodestar of the medical system, we physicians become like vultures at a carcass.

I take great offense at the implication that, because I participate in the PPO, I am not an ethical physician. Is it "truly ethical" to take advantage of one's position as Editor-in-Chief to make such an implication? I think not. Those of us who have an opportunity to provide continuing high-quality medical care to our patients, regardless of their financial situation, are morally justified and ethically correct to do so. To imply otherwise is to unjustly discriminate against those of us who are more concerned about our patients' health and happiness than our own financial well-being.

If you are not satisfied with the current system then, by all means, work to change it, but please do not condemn those who try to do the best they can within it.

—Steve Carpenter, MD
Ada

Writer says College of Medicine won't be issuing official reply

To the Editorial Board: Maintaining a collaborative and mutually supportive relationship between the Oklahoma State Medical Association and the University of Oklahoma College of Medicine is far too important to allow it to be threatened by the comments of one individual. For that very good reason, there will not be an official College response to the editorial written by Dr Ray V. McIntyre and published in the JOURNAL of the Oklahoma State Medical Association, Volume 82, May 1989. On the other hand, as a member of both the OSMA and the faculty of the College of Medicine, I wish to express maximum disagreement with both the content and tone of the editorial. Dr McIntyre, as an individual, can express any opinion he may form. When he speaks as the President of the State Medical Association and Editor of the Association's journal, the implication that the physicians on the faculty are not "truly ethical" becomes irresponsible and unacceptable.

—G. Rainey Williams, MD
Oklahoma City

JOURNAL editorials are the opinion of the editorial writer and are independent of the President's views and of Association policy. —The Editor

(Continued)

Tulsan takes issue with MRJ

To the Editor: I have followed Mark Johnson's editorials for a number of years and have generally agreed with him 100%. However, I must take issue with his recent editorial entitled "Hucksters and Hustling" which appeared in the April edition. The editor comes on a bit strong with his condemnation of management and marketing consultants. I am old enough to remember the very tail end of the "good old days" and young enough to realize that I must work with this system for a good many years yet to come. I, like most of my colleagues, find that the most enjoyable part of my job is taking care of my patients and like most of my colleagues, the most exasperating part is trying to communicate what I have done to a third party, either a computer or an eighteen-year-old Vo-Tech graduate with a certificate in medical records, whatever that is. While I agree by and large with the editor's philosophy that a large number of these people are unethical parasites, judicious use of coding consultants can be quite helpful.

Don't misjudge my comments. I am not advocating "creative billing," just trying to play their games with their rules.

—L.E. Schoeffler, MD
Tulsa

WORTH REPEATING

Editor's note: Our thanks to George W. Prothro, MD, Tulsa, who submitted the following and suggested we reprint it for the benefit of physicians throughout Oklahoma.

Who's In Charge Here Anyway?

A few years ago, there was a movie, *Who's Life Is This?* starring Richard Dreyfuss. That movie addressed the rights of the terminally ill or hopelessly afflicted patient. It portrayed the conflict between a patient's right of control over his own body and the state's power to inflict its morality and judgment on a helpless patient as well as his or her caregivers. It was frightening — but now it is reality in Oklahoma. By a vote of 31-14, the Oklahoma State Senate refused to modify the Nutrition and Hydration Act, and thereby refused to return to patients their right to refuse artificial nutrition or hydration.

As an oncologist, I have a nightmare.

The terminally ill patient with an oral cancer who cannot swallow and is in terrible pain and suffering, does not want tube feeding or IV fluids. He absolutely refuses further medical support and wishes only pain relief and an end to his agony. If the patient becomes confused, disoriented, or questionably competent, then a real problem develops under Oklahoma law. If I don't physically force a feeding tube down him and restrain him to keep the tube in place, then I have broken the Nutrition and Hydration Act law. If I do the above, then I have performed battery on the patient who can sue me, when and if he recovers. If not himself, then perhaps his wife, parent, or other "custodian" can prefer the charges. I break the law no matter what I do. If I follow the new Nutrition and Hydration Act, I am guilty of torture and of betraying all of my medical vows to relieve suffering for my patients.

This is the first example of the inevitable results of a state legislature practicing medicine. This is an impossible "catch-22" situation for the patients and physicians.

—T.J. Brickner, Jr., MD
President
Tulsa County Medical Society

Reprinted with permission. President's Page, *Tulsa Medicine*, May 1989

Editor's note: The following letter was recently distributed to physicians in Bartlesville.

Dear Doctor:
Have your office helpers had a chance to participate in the functions of the Oklahoma Medical Assistants Society?

This society is dedicated to making our office staffs more effective in helping us and in helping our patients.

Encourage your helpers to attend a meeting or two so they can learn about all the benefits of participating in the OMAS.

I feel so strongly about the benefits that I pay the yearly membership dues for my staff.

—Elvin M. Amen, MD
Bartlesville

BOOK SHOP

How to Survive Medical School. By Toni Martin, MD, New York: Holt, Rinehart and Winston, 1984. Pp 185, hardcover, $13.45; paperback, $5.95.

This small book is essentially what its title implies. It describes strategies for survival from the time of application to medical school through residency training. The author writes from the perspective of a black female student who entered medical school more than a decade ago. She frequently refers to her own experience as a medical student and as the wife of a medical student. She presents her ideas of how a marriage might survive medical school and residency training.

This is an interesting and readable book. Some students and physicians will find the experiences described and the advice given by Dr Martin to be realistic and similar to their own. Others will disagree with it. Most will find the book interesting.

—Harris D. Riley, Jr., MD
Oklahoma City

New Vaccine Development: Establishing Priorities, Vol. 1: Diseases of Importance in the United States. By the Committee on Issues and Priorities for New Vaccine Development, Division of Health Promotion and Disease Prevention, Institute of Medicine. Washington, DC: National Academy Press, 1985, 458 pages, paper $32.50.

This report describes a method designed to aid the National Institute of Allergy and Infectious Diseases in establishing priorities for accelerated vaccine development. The method is based on a quantitative model in which vaccine candidates are ranked according to two principal characteristics: expected health benefits (reduction of morbidity and mortality) and expected net savings of health resources. The history of this study extends back to the fall of 1980, when the Secretary of the Department of Health and Human Services (DHHS) accepted a recommendation by the DHHS steering committee for development of health research strategy to establish a program of accelerated development for new vaccines.

Immunization represents one of the most effective and economical, and often the sole means of prevention of certain infectious diseases. Immunization has proved to be one of the shining lights in the field of preventive medicine. Despite this, there are troubled times in the vaccine field. During the past 15 or so years, drug manufacturers have steadily reduced their production of and involvement with various

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vaccines. The number of manufacturers of vaccines has steadily declined. Many factors influence this trend, including the comparatively small return on investment, the fear of litigation related to alleged vaccine-related injury, and problems in obtaining regulatory approval. Research and development of new vaccines has been hampered by the slow-down on the part of the pharmaceutical industry for the reasons given.

The goal of the Committee on Issues and Priorities for New Vaccine Development, chaired by pediatrician Samuel L. Katz, was to develop a decision-making framework for selection among the numerous vaccine candidates available for development in this country and to use this framework to rank the vaccine candidates. The emphasis was on vaccines for use in the United States. Based on the current data, the committee selected vaccines against hepatitis B, respiratory syncytial virus, *Hemophilus influenzae* type B, influenza subunit, and herpesvirus-varicella for high-risk individuals as the five immunizing agents having the highest priority for accelerated development. The arguments for and against the selection of these particular vaccines are amply documented.

This is a very important document which will guide physicians, public health workers, and others in setting priorities for emphasis on control of various diseases.

—Harris D. Riley, Jr., MD
Oklahoma City

Letters to a Young Doctor. By Richard Selzer. New York: Simon & Schuster, 1982. Pp 205, price $13.95.

Richard Selzer, a practicing surgeon, continues his study of everyday life in this, his fourth book. In format, *Letters to a Young Doctor* is similar to his previous books, *Rituals of Surgery, Mortal Lessons,* and *Confessions of a Knife.* All contain short pieces of fiction or essays, frequently in the form of autobiographical reflections or histories of patients. He is effective in combining literature and medicine.

This small book includes a variety of short pieces that deal with a large number of topics. Five chapters are devoted to Selzer's letters to a young doctor about to enter his surgical training. The author at times seems blind to specialties or disciplines other than surgery; he has second thoughts when he points out that "anyone with reasonable academic qualifications can become a surgeon." Although these letters to a neophite house officer recall many experiences for every physician, the author's preoccupation with surgical technique and instruments becomes somewhat tedious.

The other chapters cover a wide variety of topics. "Imelda" tells the tragic story of a young girl in a foreign country who dies from complications of anesthesia during plastic surgery. In "Toenails," the authors shows his sense of humor in a touching story about an elderly man he meets in a public library and the surgical procedure he performs for him. In a drama-packed story entitled "Mercy," the author meets head-on the issue of euthanasia. For all physicians, "Rounds" will bring back memories of their training experience. "Chatterbox" is the story of a compulsive talker who performs an important service by spending hours talking to patients in a nursing home. Selzer uses this theme to point out that healing may take many different forms.

Selzer is very adept at characterization and instilling "realness" in the participants in the various chapters. He points out vividly the joys and tragedies that accompany a physician's career. Although the book frequently employs medical language, it is readily understandable and relevant to all readers. Selzer emphasizes the importance of being a competent, caring physician. His is an interesting book.

—Harris D. Riley, Jr., MD
Oklahoma City

CLASSIFIEDS

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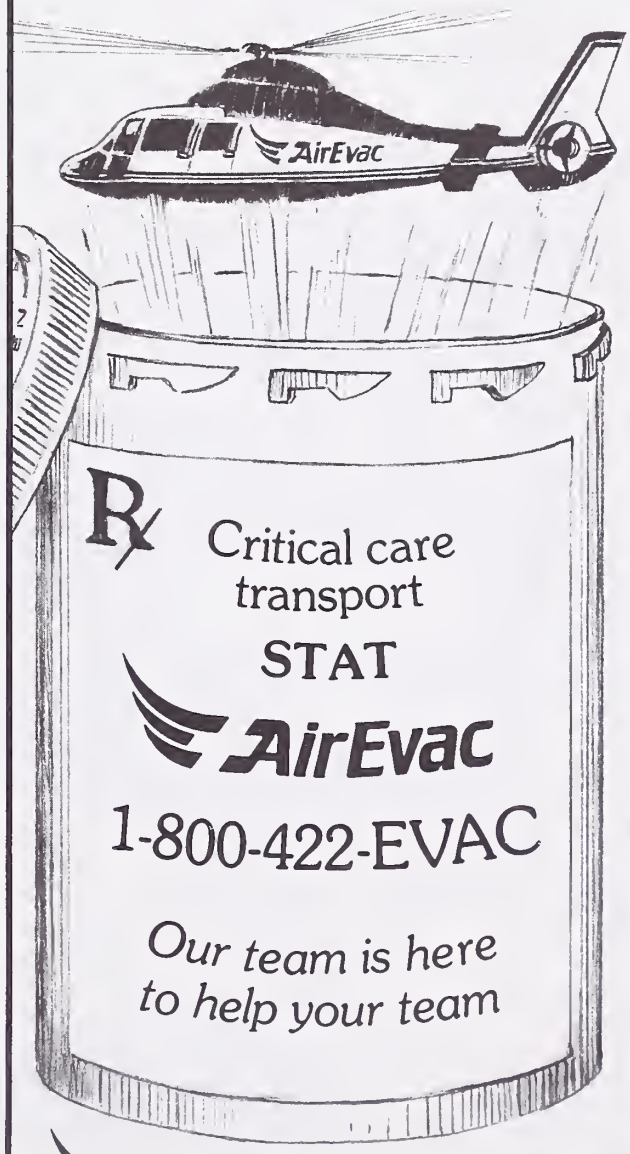

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Brief Summary

Consult the package literature for complete information.

Indications and Usage: Axid is indicated for up to eight weeks for the treatment of active duodenal ulcer. In most patients, the ulcer will heal within four weeks.

Axid is indicated for maintenance therapy for duodenal ulcer patients at a reduced dosage of 150 mg h.s. after healing of an active duodenal ulcer. The consequences of continuous therapy with Axid for longer than one year are not known.

Contraindication: Axid is contraindicated in patients with known hypersensitivity to the drug and should be used with caution in patients with hypersensitivity to other H_2-receptor antagonists.

Precautions: *General* — 1. Symptomatic response to nizatidine therapy does not preclude the presence of gastric malignancy.

2. Because nizatidine is excreted primarily by the kidney, dosage should be reduced in patients with moderate to severe renal insufficiency.

3. Pharmacokinetic studies in patients with hepatorenal syndrome have not been done. Part of the dose of nizatidine is metabolized in the liver. In patients with normal renal function and uncomplicated hepatic dysfunction, the disposition of nizatidine is similar to that in normal subjects.

Laboratory Tests — False-positive tests for urobilinogen with Multistix® may occur during therapy with nizatidine.

Drug Interactions — No interactions have been observed between Axid and theophylline, chlordiazepoxide, lorazepam, lidocaine, phenytoin, and warfarin. Axid does not inhibit the cytochrome P-450-linked drug-metabolizing enzyme system, therefore, drug interactions mediated by inhibition of hepatic metabolism are not expected to occur. In patients given very high doses (3,900 mg) of aspirin daily, increases in serum salicylate levels were seen when nizatidine, 150 mg b.i.d., was administered concurrently.

Carcinogenesis, Mutagenesis, Impairment of Fertility — A two-year oral carcinogenicity study in rats with doses as high as 500 mg/kg/day (about 80 times the recommended daily therapeutic dose) showed no evidence of a carcinogenic effect. There was a dose-related increase in the density of enterochromaffin-like (ECL) cells in the gastric oxyntic mucosa. In a two-year study in mice, there was no evidence of a carcinogenic effect in male mice, although hyperplastic nodules of the liver were increased in the high-dose males as compared with placebo. Female mice given the high dose of Axid (2,000 mg/kg/day, about 330 times the human dose) showed marginally statistically significant increases in hepatic carcinoma and hepatic nodular hyperplasia with no numerical increase seen in any of the other dose groups. The rate of hepatic carcinoma in the high-dose animals was within the historical control limits seen for the strain of mice used. The female mice were given a dose larger than the maximum tolerated dose, as indicated by excessive (30%) weight decrement as compared with concurrent controls and evidence of mild liver injury (transaminase elevations). The occurrence of a marginal finding at high dose only in animals given an excessive and somewhat hepatotoxic dose, with no evidence of a carcinogenic effect in rats, male mice, and female mice (given up to 360 mg/kg/day, about 60 times the human dose), and a negative mutagenicity battery are not considered evidence of a carcinogenic potential for Axid.

Axid was not mutagenic in a battery of tests performed to evaluate its potential genetic toxicity, including bacterial mutation tests, unscheduled DNA synthesis, sister chromatid exchange, mouse lymphoma assay, chromosome aberration tests, and a micronucleus test.

In a two-generation, perinatal and postnatal fertility study in rats, doses of nizatidine up to 650 mg/kg/day produced no adverse effects on the reproductive performance of parental animals or their progeny.

Pregnancy — Teratogenic Effects — Pregnancy Category C — Oral reproduction studies in rats at doses up to 300 times the human dose and in Dutch Belted rabbits at doses up to 55 times the human dose revealed no evidence of impaired fertility or teratogenic effect, but, at a dose equivalent to 300 times the human dose, treated rabbits had abortions, decreased number of live fetuses, and depressed fetal weights. On intravenous administration to pregnant New Zealand White rabbits, nizatidine at 20 mg/kg produced cardiac enlargement, coarctation of the aortic arch, and cutaneous edema in one fetus and at 50 mg/kg it produced ventricular anomaly, distended abdomen, spina bifida, hydrocephaly, and enlarged heart in one fetus. There are, however, no adequate and well-controlled studies in pregnant women. It is also not known whether nizatidine can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. Nizatidine should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers — Studies conducted in lactating women have shown that <0.1% of the administered oral dose of nizatidine is secreted in human milk in proportion to plasma concentrations. Caution should be exercised when administering nizatidine to a nursing mother.

Pediatric Use — Safety and effectiveness in children have not been established.

Use in Elderly Patients — Ulcer healing rates in elderly patients are similar to those in younger age groups. The incidence rates of adverse events and laboratory test abnormalities are also similar to those seen in other age groups. Age alone may not be an important factor in the disposition of nizatidine. Elderly patients may have reduced renal function.

Adverse Reactions: Clinical trials of nizatidine included almost 5,000 patients given nizatidine in studies of varying durations. Domestic placebo-controlled trials included over 1,900 patients given nizatidine and over 1,300 given placebo. Among reported adverse events in the domestic placebo-controlled trials, sweating (1% vs 0.2%), urticaria (0.5% vs < 0.01%), and somnolence (2.4% vs 1.3%) were significantly more common in the nizatidine group. A variety of less common events was also reported; it was not possible to determine whether these were caused by nizatidine.

Hepatic — Hepatocellular injury, evidenced by elevated liver enzyme tests (SGOT [AST], SGPT [ALT], or alkaline phosphatase), occurred in some patients and was possibly or probably related to nizatidine. In some cases, there was marked elevation of SGOT, SGPT enzymes (greater than 500 IU/L) and, in a single instance, SGPT was greater than 2,000 IU/L. The overall rate of occurrences of elevated liver enzymes and elevations to three times the upper limit of normal, however, did not significantly differ from the rate of liver enzyme abnormalities in placebo-treated patients. All abnormalities were reversible after discontinuation of Axid.

Cardiovascular — In clinical pharmacology studies, short episodes of asymptomatic ventricular tachycardia occurred in two individuals administered Axid and in three untreated subjects.

CNS — Rare cases of reversible mental confusion have been reported.

Endocrine — Clinical pharmacology studies and controlled clinical trials showed no evidence of antiandrogenic activity due to Axid. Impotence and decreased libido were reported with equal frequency by patients who received Axid and by those given placebo. Rare reports of gynecomastia occurred.

Hematologic — Fatal thrombocytopenia was reported in a patient who was treated with Axid and another H_2-receptor antagonist. On previous occasions, this patient had experienced thrombocytopenia while taking other drugs. Rare cases of thrombocytopenic purpura have been reported.

Integumental — Sweating and urticaria were reported significantly more frequently in nizatidine- than in placebo-treated patients. Rash and exfoliative dermatitis were also reported.

Hypersensitivity — As with other H_2-receptor antagonists, rare cases of anaphylaxis following administration of nizatidine have been reported. Because cross-sensitivity in this class of compounds has been observed, H_2-receptor antagonists should not be administered to individuals with a history of previous hypersensitivity to these agents. Rare episodes of hypersensitivity reactions (eg, bronchospasm, laryngeal edema, rash, and eosinophilia) have been reported.

Other — Hyperuricemia unassociated with gout or nephrolithiasis was reported. Eosinophilia, fever, and nausea related to nizatidine administration have been reported.

Overdosage: Overdoses of Axid have been reported rarely. The following is provided to serve as a guide should such an overdose be encountered.

Signs and Symptoms — There is little clinical experience with overdosage of Axid in humans. Test animals that received large doses of nizatidine have exhibited cholinergic-type effects, including lacrimation, salivation, emesis, miosis, and diarrhea. Single oral doses of 800 mg/kg in dogs and of 1,200 mg/kg in monkeys were not lethal. Intravenous median lethal doses in the rat and mouse were 301 mg/kg and 232 mg/kg respectively.

Treatment — To obtain up-to-date information about the treatment of overdose, a good resource is your certified regional Poison Control Center. Telephone numbers of certified poison control centers are listed in the *Physicians' Desk Reference (PDR)*. In managing overdosage, consider the possibility of multiple drug overdoses, interaction among drugs, and unusual drug kinetics in your patient.

If overdosage occurs, use of activated charcoal, emesis, or lavage should be considered along with clinical monitoring and supportive therapy. Renal dialysis for four to six hours increased plasma clearance.

PV 2096 AMP [013089]

Additional information available to the profession on request.

83rd Annual Meeting
Oklahoma State Medical Association

PROCEEDINGS

May 4-6, 1989
Sheraton Kensington Hotel
Tulsa

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Annual Meeting photographs by Susan Records, Ed Kelsay, and Mike Sulzycki

OSMA House of Delegates

REPORT OF THE PRESIDENT

Ray V. McIntyre, MD

A year ago, we thought together about the many problems facing the medical profession in Oklahoma. Today, we still have about the same list of problems; some have waxed and some have waned in intensity. A few new problems have cropped up and a few old problems have disappeared.

On that occasion a year ago, the need for we physicians to work together was mentioned. I would like to reiterate that idea today. During the past year, the association's successes were due to united efforts, and in those areas where we didn't do so well, the failure can usually be traced to the lack of unity.

The PPO health insurance plan for state employees promoted by the State Employees Health Insurance Board has become a rancorous problem. The OSMA has always been strongly supportive of the educational mission and the indigent care mission of the Oklahoma memorial hospitals. However, the PPO insurance project is viewed by many Oklahoma physicians as unfair economic competition totally outside the legitimate agenda of a state hospital. Obviously, the PPO concept of insurance is based on a discriminatory monetary factor that has nothing to do with medical ability. I personally doubt that a state government agency can ever peacefully operate a preferred provider program, for the simple reason that those providers discriminated against are citizens with equal rights to those providers selected to be included.

Regardless of the economic principles, the present State Employees health plan is in severe disarray, out of money and in administrative chaos. A complete legislative restructuring is now necessary, and appears to be in the offing. The association has made diplomatic contact with the process, in the hope that we may have input into restructuring the plan so that it will be fair to *all* licensed physicians and hospitals.

Tort reform remains a perennial problem and it makes me sad to have to tell you that essentially nothing has been accomplished on tort reform this year. The State Senate leadership remains adamant in refusing committee debate on tort reform bills. I believe it is time for the association to seriously consider tort reform through constitutional amendment. It may be possible to include some tort reform in the Governor's Constitutional revision study commission project. If that method fails, the association should roll up its sleeves and go to work on an initiative petition drive and constitutionally correct these present injustices in our tort system.

If our legislature continues to thwart our request for a hearing on this issue we must bypass the legislature and go to the people with an initiative petition.

I close with a plea for unity and united work. Let us study our problems, debate our solutions, and arrive at a consensus for change that we can all labor for. Let there be no North nor South, nor East nor West. No Tulsa nor Oklahoma City nor Podunk. Let there be Oklahoma physicians working together to correctly serve Oklahoma people.

Respectfully submitted,
Ray V. McIntyre, MD
President

OSMA House of Delegates

REPORT OF THE PRESIDENT-ELECT

John R. Alexander, MD

President McIntyre, Mr. Speaker, and fellow members of the House of Delegates: It is with great anxiety and anticipation that I speak to you today. I also speak with great appreciation for the opportunity, as well as the honor, you have afforded me in selecting me as your incoming president.

The awesome task of leading this great organization over the next year is a tremendous challenge that I look forward to. Certainly we have had an excellent track record set by previous effective leaders in Oklahoma Medicine, such as the McIntyres, Dunitz, Amen , Eskridge, Kamp, Welborn, Calhoon, Crosthwait, Lewis, Miller, Pitts, and the many others who have preceded me and molded this organization into the strong, quality, effective organization that it is today. Certainly I feel a little relieved and more secure to know that most of these leaders continue to be active today. It is also assuring that we have such a strong support staff and executive director who will be able to point me in the right direction and provide the necessary support to keep me above the water. I know that the job is impossible without this type of support, the envy of so many other state societies not so fortunate.

I am about to undergo a very significant change in my life, one which will have a long-lasting effect on my practice, family life, and probably my health (both psychological and general). One would think that I may need a psychiatric exam with psychoanalysis for taking on such a task that would have such potential effects on my existence, especially at this time in our history as a profession! Has there ever been any time in our profession in which changes have occurred so rapidly?

Change is coming down the track so fast; such momentum has built up that we will not be able to stop it. We can only hope to have some significant impact in altering its course and having some voice in the decision-making process. The time to prevent these changes has long passed, no matter how much we would like to go back or stay where we are today. I heard the statement, "We must make changes in our system now, or someone will make them for us," all through my years of training and early practice, but it seemed we were complacent and satisfied with the status quo.

The public, private industry, and government together now are demanding change and have set into motion many changes with only minimal input from Medicine. We are seeing our profession challenged not only from without, but also from within the health care industry, with the nursing profession and others developing more independence and assertiveness in suggesting change from the traditional.

Private industry, which has funded an increasing portion of the health care budget over the past years, is pushing for more cost-containing measures and methods of practice. They are also concerned about having to pick up a large share of the bill for the estimated 37 million Americans who have no health insurance and are considered to be medically indigent.

Government, which hesitates to admit that there are only so many dollars available for health care and that everything previously promised cannot be provided, is caught in a budget crunch and will continue to effect changes that impact heavily on the health care budget.

At the recent National Leadership Conference of the AMA, we were exposed to 74 major trends affecting Medicine into the 21st century as presented by Dr. Marvin Cetron, one of the nation's foremost futurists. These

were broken down into groups of trends that included:

1. General long-term society
2. Technology
3. Education
4. Labor force and work
5. Management
6. Values and concerns
7. Families
8. Institutions

I will not attempt to discuss all these trends except to say that the numbers and types of trends are both mind boggling and frightening to consider.

With all these trends and factors tending to affect Medicine in the coming years, the profession needs to be at its greatest strength and develop ideas, innovations, proactive actions, and a strong defense. At this time of greatest need, unfortunately, we are seeing divisions develop in our Federation. We see the effect of the RBRVS, resulting in the radiologists going their own way to strike a deal, and the surgeons negotiating independently on their own behalf. We see such controversies as a war of words between the American College of Physicians and the College of American Pathologists over the Blues guidelines on lab testing. We also do not see physicians getting involved in the decision-making processes in any greater numbers than before, when I would expect the majority to feel threatened and eager to participate some way or another.

This next year we will attempt to emphasize the development of increased numbers of our members who become active participants in the system. The new methodology of electing representatives for the AMA House of Delegates was a good start at improving the excitement of the House and allows an opportunity for new involvement.

We will also stress increased teamwork by working on improved communication between state and county components, allowing a wider number of individuals to participate with minimal time away from active practice.

The problem areas that need continued focus of effort are numerous and include:

1. Access to health care
2. Mandatory assignment
3. Plight of rural health care
4. RBRVS and potential division of Medicine
5. Indigent care issue
6. Tort reform
7. Expansion of Medicaid
8. Shortage of bedside caregivers
9. Antitrust enforcement
10. Alternative health care systems
11. Utilization/quality assessment and management
12. Development of clinical guidelines
13. Need to increase funding for medical education and research, decreasing "town/gown" clash
14. Potential limitation of resources and rationing of care
15. Mandatory acceptance of all government-insured patients
16. Uninsured workers
17. Abortion/right to life/nutrition and hydration
18. Physician-owned facilities
19. Drugs
20. Ethics
21. Labor relations
22. Preventive health
23. Emergency services

This is just to name a few of the areas of problem concern. It is obvious that we won't have a solution for every problem, but we will continue to monitor those areas and develop policy and responses for as many as possible. Some areas will have greater emphasis than others, such as child abuse and tort reform did under the fine leadership of Ray McIntyre this last year.

One area on which we will put a "full court press" is the VIP or "Very Important Patient" program, which has been a model for the nation in the component societies' development of a defense for mandatory assignment. We need to "fine tune" our program and have it as a "showpiece" for our legislators when they give consideration to mandatory assignment.

To tackle any of these problems successfully, we must have more participation from our membership. As members of the House of Delegates present today, you are participating; but more involvement on each of our parts, carrying the message back home, and providing leadership and encouragement there is critical.

We must emphasize unity at this time, particularly in areas relating to economic issues. Continuing the divergence of views within the medical profession on many issues makes it exceptionally difficult for the association to achieve its legislative goals. While we respect the right of medical organizations to have their own views, we recognize that those conflicting views weaken Medicine as a whole; instead, they provide a climate like that faced by physicians in other nations where the profession has been divided and ultimately defeated in dealing with select special interest items. We must also face the major challenge of maintaining and improving the quality of care by solidifying our leadership position and take the lead in quality assurance and quality evaluation, and to influence the development of laws, regulations, payment systems, and review systems having a bearing on quality. We need to be at the table when the decisions are made, rather than just reacting AFTER the decisions are made.

We must develop strategic alliances and also overcome the barriers to teamwork that are characteristic of the medical profession, such as:

1. Loosely coupled affiliations
2. Biomedical focus
3. Administration not valued
4. Time scarcity
5. Strong subspecialty orientation
6. No shared administrative norms

By overcoming these barriers, achieving greater participation, developing more proactive activities, and improved teamwork, we should be able to carry the ball further and more effectively, and be able to "win some of the games" for our patients and our profession. The future of health care in Oklahoma depends on us!

Respectfully submitted,
John R. Alexander, MD
President-Elect

Minutes
OSMA House of Delegates
OPENING SESSION

Friday, May 5, 1989, 9:00 AM

I. Call to Order and Opening Invocation

The House of Delegates convened its 83rd Annual Session at the Sheraton Kensington Hotel in Tulsa, Oklahoma, on May 5, 1989. Speaker Larry L. Long, MD, called the meeting to order at 9:10 AM.

Joe S. Hester, MD, Muskogee, delivered the invocation.

II. Report of the Credentials Committee

Billy D. Dotter, MD, Okeene, Credentials Committee Chairman, announced that a quorum was present.

III. Introductions

Doctor Long introduced those at the head table: Ray V. McIntyre, MD, President; John R. Alexander, MD, President-Elect; Perry A. Lambird, MD, Vice-President; Robert G. Perryman, MD, Vice-Speaker of the House; Joe S. Hester, MD, Muskogee, Parliamentarian; Mr. David Bickham, OSMA Executive Director; and Mrs. Bobbye Brown and Mrs. Toni Leverett, Recording Secretaries.

Doctor Long then introduced and welcomed the following special guests: Mr. Rick Ernest, Executive Director, Oklahoma County Medical Society; Mr. Paul Patton, Executive Director, Tulsa County Medical Society; C. Alton Brown, MD, President, Physicians Liability Insurance Company; Mr. Bill Roberts, Director, AMA Medical Society Relations; and Mrs. Jan Storms, President, OSMA Auxiliary, who in turned introduced Mrs. Jean Hill, AMA Auxiliary President-Elect, from Hollandale, Mississippi.

Mrs. Hill noted that physician spouses share the doctors' concerns and are helping by initiating health programs and projects within their communities, particularly adolescent health. She stated that the AMAA is becoming increasingly involved in the legislative arena, and auxilians have renewed their commitment to medical education.

Mrs. Storms then reported on OSMA Auxiliary activities and was proud to announce an increased membership by 41 this year. She noted that Oklahoma won the membership challenge between OSMAA and the Missouri Auxiliary. Mrs. Storms expressed her pleasure in representing the Auxiliary at the OMPAC/AMPAC Board of Directors and the OSMA Council on State Legislation. She also announced that Oklahoma is the only Auxiliary which has two individuals serving in national capacities.

Mrs. Storms introduced Mrs. Maureen Bynum, OSMAA President-Elect. Mrs. Bynum commented that Auxilians face the challenges side-by-side with physician spouses, and that she is looking forward to serving as president this next year.

Doctor Long recognized Dr. C. Alton Brown, who reviewed his activities in developing a position for a Chair for the Diabetes Professorship at the University of Oklahoma Health Sciences Center. He introduced James G. Gavin III, MD, the new Chief of the Diabetes Section at the Health Sciences Center, and duly installed him. Doctor Gavin expressed his appreciation and pleasure in working in this capacity. Doctor Brown introduced Mrs. Annie Gavin and then Dr. Patrick A. McKee, Chairman of the Department of Medicine at the University of Oklahoma Health Sciences Center. Doctor McKee stated Doctor Gavin has already made a major impact and expressed his gratitude to the Warren Foundation in helping make the chairmanship possible.

Doctor Long introduced OSMA Past Presidents in attendance: Elvin M. Amen, MD; Ed L. Calhoon, MD; M. Joe Crosthwait, MD; Norman L. Dunitz, MD, J. B. Eskridge III, MD; George H. Kamp, MD; Marvin K. Margo, MD; John A. McIntyre, MD; Floyd F. Miller, MD; and James B. Pitts, Jr., MD.

IV. Approval of the Minutes of the 1988 Annual Meeting

The minutes, Doctor Long noted, were published in the July 1988 issue of the JOURNAL. It was moved, seconded and carried that the minutes be approved as published.

V. Presentations

Doctor Long recognized the Auxiliary's State AMA-ERF Chairman, Mrs. Karen Mask, who presented the following checks to the three medical colleges in Oklahoma for their medical school excellence funds and medical student assistance funds:

$1,842.44 was presented to Mr. Bryce Bliss on behalf of Oral Roberts University College of Medicine.

$24,406.51 was presented to Edward N. Brandy, Jr., MD, Dean of the University of Oklahoma College of Medicine, Oklahoma City.

$3,533.50 was presented to Edward J. Tomsovic, MD, Dean of the University of Oklahoma Tulsa Medical College, Tulsa.

Doctor Long recognized Ray V. McIntyre, MD, OSMA JOURNAL, Editor-in-Chief, who presented the Charlotte S. Leebron Memorial Trust Award to Dr. Thomas D. Tinker, for his and Dr. Teresa M. Stacy's article, "Ten Caveats in the Early Management of Acute Epiglottitis in Children, which

was published in the August 1988 issue. Doctor Tinker expressed his thanks.

Doctor Long recognized Mr. Pat Doyle, representative for Sandoz Pharmaceuticals, to present the Sandoz Award, a check for $250.00 and a certificate. The award was received by Ms. Susan Records, JOURNAL Managing Editor, who expressed her thanks.

Doctor Long announced that the 1989 A. H. Robins Community Service Award will go to Charles E. Green, MD, Lawton, and this year's recipient of the Donald J. Blair Friend of Medicine Award is Mr. David Bickham. Both awards will be presented at the August meeting of the Board of Trustees.

VI. Remarks of the Speaker

Doctor Long cited the appointees to the following committees to assist in the conduct of the meeting:

Parliamentarian
Joe S. Hester, MD, Muskogee

Credentials Committee
Billy D. Dotter, MD, Okeene, Chairman
John B. Nettles, MD, Tulsa

Tellers
Joseph L. Krueger, MD, Altus
Ollie W. DeHart, MD, Vinita
Clarence Robison, Jr., MD, Oklahoma City
Jay A. Gregory, MD, Muskogee

Sergeant-at-Arms
James R. Rhymer, MD, Clinton
Norman A. Cotner, MD, Grove

Reference Committee I
Theodore J. Brickner, Jr., MD, Tulsa, Chairman
Jay L. Bryngelson, MD, Bartlesville
Edward A. Legako, MD, Lawton
W. Frank Phelps, MD, Tulsa
William C. Stone, MD, Tulsa
Jon C. Axton, MD, Oklahoma City
Gordon H. Deckert, MD, Oklahoma City
A. Munson Fuller, MD, Tulsa

Reference Committee II
M. Boyd Shook, MD, Oklahoma City, Chairman
Francis Hollingsworth, MD, El Reno
H. Douglas Proctor, MD, Atoka
Carol Blackwell-Imes, MD, Oklahoma City
Michael E. Reif, MD, Oklahoma City
Charles K. Harmon, MD, Tulsa
Boyd O. Whitlock, MD, Tulsa
Gary F. Strebel, MD, Oklahoma City

Reference Committee III
Bonnie J. Ashing, MD, Tahlequah, Chairman
Charles L. Lackey, MD, Norman
G. Lance Miller, MD, Tulsa
David C. Richardson, MD, Tulsa
William L. Hughes, MD, Oklahoma City
Philip Mosca, MD, Oklahoma City
J. Carl Hallford, MD, Guymon

Doctor Long announced the reference committees will meet directly after the Opening Session, at approximately 10:30 AM. He also referred the delegates to the late items of business accepted by the Board of Trustees for consideration by the House. He announced that Late Resolution 20 has been moved from Reference Committee I to III, and Late Resolution 17 from Reference Committee II to I.

It was moved, seconded and carried to accept all late resolutions for consideration.

VII. President's Report

Dr. Ray V. McIntyre presented his report as outgoing President of the OSMA, reviewing problems the association has confronted this past year, including the Oklahoma State Employees Group Insurance Board's PPO, and the failure of all efforts to achieve tort reform in the Legislature. He reported that OSMA has expressed a desire to have input in the restructuring of the PPO plan, and discussed the possibility of constitutional revision or initiative petition for tort reform. Doctor McIntyre stressed the importance of and need for unity within our organization.

VIII. Recess

Doctor Long declared a 10-minute recess for county medical society caucuses to prepare for nominations for the various association offices. The House reconvened at 10:00 AM.

IX. Nominations

Doctor Long announced the floor was open for nominations for the following officer and trustee positions:

President-Elect (one year term of office)
Perry A. Lambird, MD, Oklahoma City
Vice-President (one year term of office)
Billy Dale Dotter, MD, Okeene
Secretary-Treasurer (two year term of office)
James D. Funnell, MD, Oklahoma City

In the House of Delegates, Vice-Speaker Robert G. Perryman, MD (l), discusses a point of order with Speaker Larry L. Long, MD, as President Ray V. McIntyre, MD, listens.

Delegate to the AMA (Positions III, V, VI, and VII)
*Ed L. Calhoon, MD, Beaver
William O. Coleman, MD, Oklahoma City
*J.B. Eskridge III, MD, Oklahoma City
*Michael H. Haugh, MD, Tulsa
William L. Hughes, MD, Oklahoma City
George H. Kamp, MD, Tulsa
Philip Mosca, MD, Oklahoma City
Gary W. Rahe, MD, Oklahoma City
Alternate Delegate to the AMA (Positions III, V, VI and VII)
Elvin M. Amen, MD, Bartlesville
Sara R. DePersio, MD, Oklahoma City
Norman L. Dunitz, MD, Tulsa
*Burdge F. Green, MD, Stilwell
Jay A. Gregory, MD, Muskogee
Charles L. Harmon, MD, Tulsa
David L. Harper, MD, Tulsa
*James B. Pitts, Jr., MD, Oklahoma City
Clarence Robison, Jr., MD, Oklahoma City
*Gary F. Strebel, MD, Oklahoma City
(*denotes incumbents)

At this time, Doctor Long turned the meeting over to Robert G. Perryman, MD, Vice-Speaker of the House. Nominations continued for OSMA Trustees and Alternate Trustees.

Trustee (District VI-Pos. I)
Gary F. Strebel, MD, Oklahoma City
Alternate Trustee (District VI-Pos. I)
Donald R. Carter, MD, Oklahoma City
Trustee (District VI-Pos. II)
Gary W. Rahe, MD, Oklahoma City
Alternate Trustee (District VI-Pos. II)
Jon C. Axton, MD, Oklahoma City
Alternate Trustee (District VI-Pos. III)
Clarence Robison, Jr., MD, Oklahoma City
Trustee (District VII)
Eldon V. Gibson, MD, Shawnee
Alternate Trustee (District VII)
G. A. "Bill" Shelton, Jr., MD, Norman
Trustee (District VII-Pos. I)
Jerry L. Puls, MD, Tulsa
Alternate Trustee (District VIII-Pos. I)
Thomas L. Ashcraft, MD, Tulsa
Trustee (District VIII-Pos. II)
Charles K. Harmon, MD, Tulsa
Alternate Trustee (District VIII-Pos. II)
Edward W. Jenkins, MD, Tulsa
Trustee (District VIII-Pos. III)
Theodore J. Brickner, Jr., MD, Tulsa
Alternate Trustee (District VIII-Pos. III)
Boyd O. Whitlock, MD, Tulsa
Trustee (District IX)
Jay A. Gregory, MD, Muskogee
Alternate Trustee (District IX)
Thomas C. Alexander, MD, Okmulgee
Trustee (District X)
R. L. Winters, MD, Poteau
Alternate Trustee (District X)
Bruce S. Hinkley, MD, McAlester

Doctor Perryman asked for nominations for the PLICO Board of Directors (three-year terms). The following six physicians were accepted by the House, whose names were forwarded by the Board of Trustees:

*John R. Alexander, MD, Tulsa
*Ed L. Calhoon, MD, Beaver
Raymond L. Cornelison, Jr., MD, Midwest City
*Billy R. Goetzinger, MD, Oklahoma City
*Ray V. McIntyre, MD, Kingfisher
*Floyd F. Miller, MD, Tulsa
(*denotes incumbents)

There being no other nominations, the nominations were declared closed.

X. Report of the Chairman of the Board

Doctor Perryman noted that Dr. Jerry L. Puls was not present to give the Supplemental Report of the Board of Trustees, but the report is available for consideration by the House.

Doctor Perryman announced that Doctor Puls has been re-elected by the Board of Trustees to serve as Chairman, and that Dr. Sara R. DePersio was elected Vice-Chairman.

XI. Secretary-Treasurer's Report

Doctor Perryman recognized Dr. James D. Funnell for his report, which is included in the House of Delegates material, including the Price Waterhouse Audit, the Quarterly Report, and the 1989 Proposed Budget.

XII. Presentation of Business To Come Before the House

Doctor Perryman reminded the Delegates that only the information provided in the handbooks and the late business items will be considered at the reference committee meetings.

XIII. Other Business

Doctor Perryman announced the Closing Session will be held Saturday, May 6, at 9:00 AM in Ballroom Salons A and B. The PLICO Forum will meet directly after the Closing Session in the Cypress Room. The PLICO Loss Prevention Seminar is scheduled for 1:00 PM in Ballroom Salons A and B.

XIV. Necrology Report

Doctor Perryman read the Necrology Report, after which a moment of silence was observed.

1988-89 Necrology Report

Charles Nathaniel Atkins, MD
Frank Herbert Austin, MD
Luther Harrison Becker, MD
William Lawrence Bond, MD
Michael W. Brown, MD
John Hoyle Carlock, Jr., MD
James Robert Carroll, MD
Tullos Oswell Coston, MD
Vernon Dean Cushing, MD
James Breese Darrough, MD
James Park Dewar, Jr., MD
Clemens Maximilian Hartig, MD
Gordon Kent Jimerson, MD
Loyd Lee Long, Jr., MD
Peter A. MacKercher, MD
Michael Bailey McCarty, MD
William Claude McCurdy, Jr., MD
John Copeland Pickard, MD
Paul Thurston Powell, MD
Tony Willard Pratt, MD
Moorman Paul Prosser, MD
John Ralph Rafter, MD
Alexander Shadid, MD
Mary Edna Sippel, MD
Haskell Smith, MD
Hugh Albert Stout, MD
Jack Burgess Tolbert, MD
Lyman Cunningham Veazey, MD
Dean Crittenden Walker, MD
Robert Vern Weger, MD
William Eldon Wendel, MD
Douglas Earl Wilson, MD
French LaZelle Worthen, MD

XV. Recess

It was moved, seconded and carried that the Opening Session of the House of Delegates recess at 10:30 AM.

Recorded by Toni Leverett and Bobbye Brown, Recording Secretaries

Minutes
OSMA House of Delegates
CLOSING SESSION

Saturday, May 6, 1989, 9:00 AM

I. Call to Order

The Closing Session of the 83rd Annual Meeting of the House of Delegates was called to order by Speaker Larry L. Long, MD, Oklahoma City, at 9:10 AM in Ballroom Salons A and B at the Tulsa Sheraton Kensington.

II. Invocation

Mrs. Jan Storms, outgoing Auxiliary President, read a poem from the book *Loving Thoughts,* by Helen Rice, and led the invocation.

III. Report of the Credentials Committee

Doctor Billy D. Dotter, Okeene, Chairman, announced that a quorum was present.

Doctor Long introduced two OSMA Past Presidents who had come to attend this meeting: Lucien M. Pascucci, MD, and Walter E. Brown, MD, both of Tulsa.

IV. Remarks of the President-Elect

Dr. John R. Alexander was recognized for his presentation. He commented on the changing times in medicine and demands now being made on physicians. Doctor Alexander also discussed future trends of medicine and stressed that the medical profession needs to be at its greatest strength and develop ideas, innovations, proactive actions, and a strong defense.

Doctor Alexander noted his plans for the coming year — to emphasize the development of active membership participation in OSMA and to stress increased teamwork by working on improved communication between state and county components.

He emphasized the need for unity, particularly in areas relating to economic issues, and stressed the importance of overcoming divisive barriers, achieving greater membership participation, and improving teamwork.

V. Annual PLICO Shareholders Meeting

Doctor Long declared the Annual Shareholders Meeting of PLICO was in session, and introduced C. Alton Brown, MD, President of PLICO, to present his report. Doctor Brown noted that not only does PLICO sell physicians insurance at cost, but with PLICO, physicians insured have the freedom and security of an occurrence insurance policy and thus control their own destiny. He then discussed the series of legislative and judicial setbacks brought upon the medical profession.

Doctor Brown announced this year marks the first full year of the placenta retention and examination program to provide a defense for claims originating from infants born with defects. He reported on each of PLICO's committees and noted that in spite of rate increases caused by increasing claims, as of December 31, 1988, the enrollment in PLICO Health increased by 650 individuals.

In closing, Doctor brown stressed that tort reform is the only long-term solution to controlling professional liability insurance costs and urged the physicians to discuss this need with their legislators.

VI. Elections

Doctor Long reviewed the slate of nominees for uncontested positions which the House voted to approve, as listed below:

Perry A. Lambird, MD, Oklahoma City, *President-Elect*
Billy D. Dotter, MD, Okeene, *Vice-President*
James D. Funnell, MD, Oklahoma City, *Secretary-Treasurer*

Trustee District VI: Oklahoma County
- Trustee (Pos. I): Gary F. Strebel, MD, Oklahoma City
- Trustee (Pos. II): Gary W. Rahe, MD, Oklahoma City
- Alternate (Pos. I): Donald R. Carter, MD, Oklahoma City
- Alternate (Pos. II): Jon C. Axton, MD, Oklahoma City
- Alternate (Pos. III): Clarence Robison, Jr., MD, Oklahoma City

Trustee District VII: Cleveland, Creek, Lincoln, McClain, Okfuskee and Pottawatomie Counties
- Trustee: Eldon V. Gibson, MD, Shawnee
- Alternate: G.A. "Bill" Shelton, Jr., MD, Norman

Trustee District VIII: Tulsa County
- Trustee (Pos. I): Jerry L. Puls, MD, Tulsa
- Trustee (Pos. II): Charles K. Harmon, MD, Tulsa
- Trustee (Pos. III): Theodore J. Brickner, Jr., MD, Tulsa
- Alternate (Pos. I): Thomas L. Ashcraft, MD, Tulsa
- Alternate (Pos. II): Edward W. Jenkins, MD, Tulsa
- Alternate (Pos. III): Boyd O. Whitlock, MD, Tulsa

Trustee District IX: Adair, Cherokee, McIntosh, Muskogee, Okmulgee, Sequoyah and Wagoner Counties
- Trustee: Jay A. Gregory, MD, Muskogee
- Alternate: Thomas C. Alexander, MD, Okmulgee

Trustee District X: Haskell, Hughes, Latimer, Leflore, Pittsburg and Seminole Counties

Trustee: R. L. Winters, MD, Poteau
Alternate: Bruce S. Hinkley, MD, McAlester

There being no objection from the floor of the House, Doctor Long declared the above slate of nominees duly elected. He congratulated the new officers and trustees and asked that they please remain for photographs after the Closing Session.

Ballots were distributed and collected for the contested races. Doctor Long stated the election results would be announced during the course of the meeting.

VII. Reference Committee Reports

Doctor Long thanked the members of the House of Delegates who participated in the Reference Committee hearings.

He then stated the Reference Committee Reports would be governed by Roberts Rules of Order. Doctor Long added that a recommendation by a Reference Committee is automatically introduced as a motion and does not require a second.

The Reference Committee Reports considered by the House are attached and made a part of the official minutes included in the July, 1989 issue of the OSMA JOURNAL.

Report of Reference Committee I:
Presented by Theodore J. Brickner, MD, Tulsa

Reference Committee I approved the following items without amendment:

Item 1. Report of the Board of Trustees — filed for information.

Item 3. Report of the Secretary-Treasurer and the Report of the Committee on Appropriations and Auditing — adopted.

Item 4. Report of the Council on Planning and Development — adopted.

Item 5. Report of the Physicians Liability Insurance Company — filed for information.

Item 6. Report of the Oklahoma State Medical Association Auxiliary — filed for information.

Item 8. Report of the Oklahomans Against Lawsuit Abuse Coalition — filed for information, with the recommendation that the coalition report its activities and financial status to the association on a more regular basis.

Item 10. Late Resolution 17 — VIP Program.

Item 11. Late Resolution 18 — OALA Coalition Reports.

Reference Committee I approved the following items as amended:

Item 2. Supplemental Report of the Board of Trustees — adopted with the recommendation, and the House concurred, that the state dues for resident physicians be set at $21 in order that they may receive the OSMA JOURNAL.

Reference Committee I rejected the following item:

Item 8. Resolution 5 — Voting Privileges for Medical School Deans.

The Reference Committee recommended the following Substitute Resolution be adopted, and the House concurred:

"Resolved, That the OSMA Constitution and Bylaws be amended so as to grant voting privileges in the OSMA House of Delegates, automatically and without need of county election, to the deans or interim deans of the University of Oklahoma College of Medicine, the University of Oklahoma Tulsa Medical College, and the Oral Roberts School of Medicine, provided they are physician members in good standing of their county medical society, the Oklahoma State Medical Association, and the American Medical Association."

Item 9. Resolution 13 — Physician's Rights.

Reference Committee recommended that the following substitute motion be adopted, and the House concurred:

"Resolved, That the OSMA petition the State Insurance Commissioner to obtain details of the medical review and appeals process performed by all Third Party Carriers, as well the specific qualifications of all individuals performing review functions; and be it further

"Resolved, That this information be made available to all physicians in the state upon request."

The Report of Reference Committee I was then approved by the House as a whole, as amended.

Report of Reference Committee II
Presented by M. Boyd Shook, MD, Oklahoma City, Chairman

Reference Committee II approved the following items without amendment:

Item 1. Report of the President — filed for information.

Item 2. Report of the President-Elect — filed for information.

Item 3. Report of the Council on Professional and Public Relations — adopted.

Item 5. Report of the Council on Medical Education — adopted.

Item 6. Report of the Council on Medical Services — adopted.

Item 7. Report of the Young Physicians Section — adopted.

Item 8. Report of the Medical Students Section — adopted.

Item 9. Report of the Hospital Medical Staffs Section — adopted.

Item 10. Report of the Oklahoma Foundation for Peer Review — filed for information.

Item 11. Report of the OSMA Ad Hoc Committee on AIDS — filed for information, with the recommendation, to which the House concurred, that the rules and regulations for laboratory tests for HIV be referred to the Board of Trustees for further study and appropriate response to the Oklahoma State Health Department.

Item 12. Report of the JOURNAL of the Oklahoma State Medical Association — filed for information. The Reference Committee wholeheartedly supports the Resolution of Commendation for Dr. Mark R. Johnson's service as JOURNAL Editor-in-Chief for the past 20 years.

Item 15. Resolution 4 — Mental Health Director — adopted.

Item 21. Resolution 11 — Commendation to Doctor Hulsey/Environmental Projects — adopted.

Reference Committee II approved the following items as amended:

Item 4. Report of the Council on Public and Mental Health — adopted, and the House concurred, with special instructions that the portion of the report that deals with the prenatal care record be referred to the council for further study, with specific input from the American College of Obstetricians and Gynecologists, Oklahoma Sec-

tion; the state OB/GYN societies; and PLICO; and that the prenatal care form not be printed in the OSMA JOURNAL until further study is completed.

Further, the reference committee recommended, and the House concurred, that the OSMA establish a task force to study and develop a mechanism to deal with drug and alcohol education in the school systems.

Item 14. Resolution 1 — Equal Physician Reimbursement — adopted as amended by the House, whereby on Line 18, the word "equitable" would replace "equal."

Item 20. Resolution 10 — Retired Physicians and Indigent Care — amended, with House concurrence, to read as follows (additions are underlined), with the second resolve deleted:

"Resolved, That the Oklahoma State Medical Association, in cooperation with other health professional societies, survey their retired and active members in order to ascertain their willingness to volunteer some time serving in clinics for the indigent."

Item 22. Resolution 12 — Indigent Projects — Reference Committee II, with concurrence by the House, recommended this resolution be amended to read as follows (additions are underlined; deletions are struck through):

"Resolved, That the Oklahoma State Medical Association encourage and recommend that Oklahoma physicians continue to donate their time and services to help care for the indigent and uninsured; ~~in clinics and other settings established to meet such needs;~~ and be if further

"Resolved, That the Oklahoma State Medical Association ask local county medical societies to identify reputable entities which provide indigent care in the communities . . . "

AMA delegates James B. Pitts, MD (l), and James B. Eskridge III, MD, past presidents of the OSMA, share a story with John R. Alexander, MD, Tulsa, 1989-90 OSMA president. Dr Pitts and Dr Eskridge are from Oklahoma City.

Item 23. Resolution 15 — Physician Support of the Nursing Profession — amended, with House concurrence, to read as follows (additions are underlined; deletions are struck through):

"Recognize nursing's contribution to patient care by continuing to include ~~including~~ nurses on appropriate hospital medical committees;

Reference Committee II rejected the following items:

Item 6. Resolution 6 — Alzheimer's Disease Recommendations — not adopted. The Reference Committee also recommended, and the House concurred, that the resolution developed by the Governor's Task Force on Alzheimer's Disease and Related Disorders be referred back to the Council on Public and Mental Health for detailed study.

A motion was presented on the floor, proposing that the OSMA form a task force on Alzheimer's Disease. The motion was seconded and carried.

Item 17. Resolution 7 — Health Departments in Oklahoma — not adopted. The Reference Committee recommended, and the House concurred, that Resolution 7 and the Report of the Ad Hoc Committee on Public Health and Private Practice be combined in a Substitute Resolution, as follows:

"Resolved, That the physicians of the Oklahoma State Medical Association and representatives of the state and local health departments work together to encourage regular communication at the local level between community physicians and health department officials. The problem areas have been identified as follows: 1) availability of services; 2) continuity of care; 3) attitudes of patients, physicians, and employees; 4) monetary concerns; and 5) differing standards of care."

Item 18. Resolution 8 — Regional Indigent Care Authorities — not adopted.

Item 19. Resolution 9 — Education on Indigent Care Issues — not adopted.

Item 24. Late Resolution 22 — BNDD Inspections. Reference Committee II recommended, and the House concurred, the following Substitute Resolution:

Resolved, That the physicians of Oklahoma request that investigations be done in a manner that does not interdict the proper medical use of controlled drugs in the compassionate treatment of terminal illnesses and painful disabilities; and be it further

"Resolved, That the OSMA educate the membership to the BNDD laws and regulations concerning handling, storage, and recordkeeping of narcotics and the educational programs available through the BNDD."

The Report of Reference Committee II was then approved by the House as a whole, as amended.

Doctor Long turned the meeting over to Robert G. Perryman, MD, Vice-Speaker of the House.

Report of Reference Committee III

Presented by Bonnie J. Ashing, MD, Tahlequah, Chairman

Reference Committee III approved the following items without amendment:

Item 1. Report of the Council on Governmental Activities — adopted.

Item 2. Report of the Council on State Legislation — adopted.

Item 3. Report of the Council on Member Services — adopted.

Item 4. Report of the Oklahoma Medical Political Action Committee — adopted.

Item 5. Report of the Physician Recovery Committee — adopted.

Item 6. Report of the Physician Legal Action Support Committee — adopted.

Item 9. Resolution 13 — Hydration and Nutrition Act — adopted.

Item 10. Late Resolution 17 — University of Oklahoma's Request for Funding — adopted.

Item 11. Resolution 19 — Congressman Mike Synar — adopted.

Item 13. Late Resolution 21 — Utilization Parameters — adopted and referred to the OSMA Board of Trustees for action.

Item 14. Late Resolution 23 — Continuing Medical Education — adopted.

Reference Committee III rejected the following items:

Item 7. Resolution 2 — Direct Funding to University of Oklahoma Health Sciences Center. The Reference Committee recommended, with House concurrence, that the following Substitute Resolution be adopted:

"Resolved, That the Oklahoma State Medical Association work to obtain adequate funding for the University of Oklahoma Health Sciences Center."

Item 8. Resolution 3 — Dedicated Tax on Tobacco Products. The Reference Committee recommended, and the House concurred, that the following Substitute Resolution be adopted:

"Resolved, That the Oklahoma State Medical Association create, introduce and/or support legislation in the Oklahoma State Legislature that would place an additional tax on all tobacco and alcohol products; and be it further

Resolved, That this additional tax be dedicated to the funding of medical education to the University of Oklahoma Health Sciences Center."

Item 9. Resolution 14 — Physician Advertising. The Reference Committee recommended, and the House concurred, adoption of the following Substitute Resolution:

"Resolved, That the Oklahoma State Medical Association engage in an active program to enhance the image of physicians, including educating the people of Oklahoma of the charitable and compassionate acts of Oklahoma physicians and their ongoing role as patient advocates."

Item 10. Late Resolution 16 — Physician Legislative Districts. The Reference Committee recommended, and the House concurred, adoption of the following Substitute Resolution:

"Resolved, That the Oklahoma State Medical Association enhance its efforts and expeditiously identify physician members in their legislative districts; and be it further

"Resolved, That the Oklahoma State Medical Association members cooperate in obtaining this data by providing their home addresses and names of their legislators."

Item 12. Late Resolution 20 — AMA Voluntary Membership — not adopted, with one dissenting vote.

The Report of Reference Committee III was then approved by the House as a whole, as amended.

VII. Other Business

Doctor Perryman announced the election results for the AMA Delegates: Ed L. Calhoon, MD, Beaver; William O. Coleman, MD, Oklahoma City; Michael J. Haugh, MD, Tulsa; and George H. Kamp, MD, Tulsa. AMA Alternate Delegates elected by the House are: Sara R. DePersio, MD, Oklahoma City; Norman L. Dunitz, MD, Tulsa; Jay A. Gregory, MD, Muskogee; and Gary F. Strebel, MD, Oklahoma City.

Doctor Perryman announced the election results for the PLICO Board of Directors: John R. Alexander, MD, Tulsa; Ed L. Calhoon, MD, Beaver; Billy R. Goetzinger, MD, Oklahoma City; Ray V. McIntyre, MD, Kingfisher; and Floyd F. Miller, MD, Tulsa.

Dr. Michael J. Haugh then expressed his thanks to Dr. Orange M. Welborn, Ada, for his many years of dedicated service as AMA Delegate, and moved that a letter of commendation be forwarded to him. The motion was seconded and carried. Dr. M. Joe Crosthwait, AMA Caucus Chairman, moved that an amendment be made to this motion, whereby Doctor Welborn would be invited to the August Board of Trustees meeting and be presented with the commendation at that time.

Dr. Perry A. Lambird recognized Drs. J. B. Eskridge III and James B. Pitts, Jr., both of Oklahoma City, for their outstanding service in the Oklahoma Delegation to the AMA. Dr. George H. Kamp recognized and commended Dr. Victor L. Robards, Jr., Tulsa, for his dedicated service as AMA Alternate for several years.

Doctor Funnell noted his pleasure in the candidates session held Friday afternoon and hoped this would become a tradition at future OSMA annual meetings.

Doctor Long announced the PLICO Forum will meet in the Cypress Room directly after this meeting; the PLICO Loss Prevention Seminar is scheduled for 1:00 in Ballroom Salons A and B.

IX. Adjournment

There being no further business, the Closing Session of the 83rd meeting of the OSMA House of Delegates adjourned at 10:40 AM

Recorded by Toni Leverett and Susan Meeks, Recording Secretaries

OSMA House of Delegates
RESOLUTIONS

Among those taking a break in the atrium of the Sheraton Kensington are Leo Meece, MD (c), Woodward, and William L. Hughes, MD (r), Oklahoma City.

RESOLUTION 1
(Adopted as Amended)

Introduced by: Northwest County Medical Society
Michael W. Flaherty, MD, Shattuck
Kenneth L. Evans, MD, Shattuck
Subject: **Equal Physician Reimbursement**
Referred to: Reference Committee II

WHEREAS, The physicians of the Northwest County Medical Society do subscribe to quality medical care to all patients irrespective of third party payor; and

WHEREAS, The elderly citizens should have the right to select where they live, whether it be metro or rural Oklahoma; and

WHEREAS, The elderly citizens of the State of Oklahoma have the right to quality patient care and accessibility to patient care; and

WHEREAS, The recruiting of physicians to rural Oklahoma is increasingly difficult due to the reimbursement system of the federal government; now therefore be it

Resolved, That the physicians of Oklahoma support the development of an ~~equal~~ equitable physician reimbursement system statewide to enhance physician recruitment to rural Oklahoma and continue to provide accessibility and availability of quality patient care to elder citizens of the State of Oklahoma.

RESOLUTION 2
(Not Adopted)

Introduced by: Oklahoma County Medical Society
M. Boyd Shook, MD, President
Subject: **Direct Funding to University of Oklahoma Health Sciences Center**
Referred to: Reference Committee III

WHEREAS, Appropriate funding to the University of Oklahoma Health Sciences Center is vital to the quality of trained physicians and medical research; and

WHEREAS, Adequate funding would enable the Medical School Faculty to devote more time to training physicians and not place them in the position of having to compete with private physicians in order to supplement, with revenue, the funds required to operate a quality and competitive Medical School; and

WHEREAS, When all funds go to the University of Oklahoma regents for distribution to the various Colleges and Departments, the process can sometimes dilute the funds to the point where inadequacies occur; now therefore be it

Resolved, That the Oklahoma State Medical Association Council on State Legislation work to introduce and support legislation in the Oklahoma State Legislature to allow direct funding to the University of Oklahoma Health Sciences Center.

SUBSTITUTE RESOLUTION 2
(Adopted)

Resolved, That the Oklahoma State Medical Association work to obtain adequate funding for the University of Oklahoma Health Sciences Center.

RESOLUTION 3
(Not Adopted)

Introduced by: Oklahoma County Medical Society
M. Boyd Shook, MD, President
Subject: **Dedicated Tax on Tobacco Products**
Referred to: Reference Committee III

WHEREAS, The University of Oklahoma Health Sciences Center is funded primarily through Oklahoma citizens' tax dollars; and

WHEREAS, Those tax dollars have decreased over the past few years due

to the declining economy of Oklahoma; and

WHEREAS, In order to maintain the appropriate funding level, decisions are having to be made by lawmakers whether to divert funds or decrease funding to the University of Oklahoma Health Sciences Center; and

WHEREAS, Any decrease in funding will directly affect the number and quality of physicians trained at the University of Oklahoma Health Sciences Center; and

WHEREAS, More and more citizens are requiring medical attention due to ill effects of the voluntary use of tobacco products; now therefore be it

Resolved, That the Oklahoma State Medical Association Council on State Legislation, through its lobbyist and other legislative contacts, create, introduce and/or support legislation in the Oklahoma State Legislature that would place a tax on all tobacco products; and be it further

Resolved, That this tax be dedicated to medical education in Oklahoma.

SUBSTITUTE RESOLUTION 3

(Adopted)

Resolved, That the Oklahoma State Medical Association create, introduce and/or support legislation in the Oklahoma State Legislature that would place an additional tax on all tobacco and alcohol products, and be it further

Resolved, That this additional tax be dedicated to the funding of medical education to the University of Oklahoma Health Sciences Center.

RESOLUTION 4

(Adopted)

Introduced by: Council on Public and Mental Health
Robert M. Mahaffey, MD, Chairman
Subject: **Mental Health Director**
Referred to: Reference Committee II

WHEREAS, The care and treatment of the mentally ill, and promotion of mental health, is a medical specialty area; now therefore be it

Resolved, That the Oklahoma State Medical Association House of Delegates support the position that the Director of the Oklahoma State Department of Mental Health be a physician trained in psychiatry and experienced in management and government relations.

RESOLUTION 5

(Not Adopted)

Introduced by: Oklahoma County Medical Society
M. Boyd Shook, MD, President
Tulsa County Medical Society
Theodore J. Brickner, Jr., MD, President
Subject: **Voting Privileges for Medical School Deans**
Referred to: Reference Committee I

WHEREAS, Oklahoma physicians, true to the tenets of the Hippocratic Oath, played and continue to play a major role in the development of medical education in Oklahoma through their work as clinical faculty members; and

WHEREAS, Oklahoma's medical colleges rank among the nation's best; and

WHEREAS, Faculty physicians and community physicians have a long history of cooperation in improving medicine and medical education; and

WHEREAS, The OSMA seeks to enhance that spirit of cooperation by granting formal representation to our state's medical colleges in the OSMA governing House of Delegates; now therefore be it

Resolved, That the OSMA Constitution and Bylaws be amended so as to grant voting privileges in the OSMA House of Delegates, automatically and without need of county election, to the deans or interim deans of each Oklahoma allopathic college of medicine, providing they are physician members, in good standing, with their County Medical Society, the Oklahoma State Medical Association and the American Medical Association.

SUBSTITUTE RESOLUTION 5

(Adopted)

Resolved, That the OSMA Constitution and Bylaws be amended so as to grant voting privileges in the OSMA House of Delegates, automatically and without need of county election, to the deans or interim deans of the University of Oklahoma College of Medicine, the University of Oklahoma Tulsa Medical College, and the Oral Roberts School of Medicine, providing they are physician members in good standing with their county medical society, the Oklahoma State Medical Association and the American Medical Association.

RESOLUTION 6

(Not Adopted. Referred Back to Council.)

Introduced by: Council on Public and Mental Health
Robert M. Mahaffey, MD, Chairman
Subject: **Alzheimer's Disease Recommendations**
Referred to: Reference Committee II

WHEREAS, The prevalence of severe dementia in the United States has been estimated to be at three million cases, of which 60% are of the Alzheimer's type; and

WHEREAS, Roughly half of all nursing home beds are occupied by Alzheimer's victims; and

WHEREAS, Of those over age 65, 5 to 7% suffer from Alzheimer's Disease, and over age 80 the figure rises to 20%; and

WHEREAS, As the number of people living longer continues to rise, the number of Alzheimer's patients will correspondingly increase; and

WHEREAS, The Governor's Task Force on Alzheimer's Disease and Related Illnesses has completed its report, which the Oklahoma State Medical Association Council on Public and Mental Health supports; now therefore be it

Resolved, That the Oklahoma State Medical Association support and advocate the recommendations developed by the Oklahoma Governor's

Task Force on Alzheimer's Disease and Related Disorders, a summary of which is attached to this resolution.

Recommendations of the Governor's Task Force on Alzheimer's Disease and Related Disorders

In the Area of Education and Training

1. Mandate appropriate funds and state legislative intent for the Regents for Higher Education to finance and implement in all medical, osteopathic, nursing and allied health professisonal courses of study a basic curriculum component on Alzheimer's Disease and related disorders.
2. The Legislature should appropriate funds and direct that the State Board of Vocational and Technical Education finance and implement in any nursing, health or allied health programs a basic curriculum component on Alzheimer's Disease and related disorders.
3. Provide for the development of training programs across the state for persons giving in-home respite care to relieve the Alzheimer's patients' families, through the private sector hospital programs and voluntary health organizations.
4. Mandate via legislation with appropriate financial support, core and continuing educational programs for those who in their profession and/or employment deal with Alzheimer's Disease and related disorders patients and their family members.
5. Provide training programs across the state for persons giving in-home respite care to relieve the Alzheimer's Disease and related disorders patients' families or caregivers.
6. Establish through the Regional Diagnostic Centers training modules for family members and caregivers as well as the public at large.

In the Area of Research and Development

1. Develop community Alzheimer's Disease diagnostic centers to be regionally based throughout the state. These centers would work in conjunction with primary care physicians specially trained, from these communities, and could also access neurological specialists where available. Standard protocols for full diagnostic evaluation would be utilized.
2. Establish a Consortium of Alzheimer's Disease Research and Diagnostic Center utilizing facilities of Oklahoma City and Tulsa and working in collaboration with the University of Oklahoma Health Sciences Center, the University of Oklahoma Tulsa Medical College, the Oral Roberts University College of Medicine, and the Oklahoma State University College of Osteopathic Medicine. Additionally, the Oklahoma City Veterans Administration Medical Center and the other major medical centers and facilities should be included. The consortium should coordinate Alzheimer's Disease research, treatment and diagnosis with a standardized protocol. The consortium would need a minimum of $300,000 per year state money plus approximately $1,000,000 private or other funds.
3. Expand Alzheimer's Disease training programs for medical students and allied health professionals along with continuing education for physicians and allied health professionals.

In the Area of Needed Services

1. Design institutional facilities and services to meet the special needs of dementia patients.
2. Develop and appropriately fund an array of services (or "continuum of care") for the patient and assistance of the family, including the following:
   - Diagnosis and referral
   - Counseling:
     - Emotional support
     - Disease education
     - Work/retirement issues
     - Financial/estate issues
     - Legal issues
     - Support groups
   - Personal Services:
     - Escort services
     - Home delivered meals
     - Homemaker services
     - Friendly visitor/companion services
     - Personal care services
     - Home health care services
     - Transportation
     - Adult Day Care
   - Custodial Care:
     - Room and board facility
     - Adult foster care
     - Group home
   - Nursing care facilities:
     - Specialized programs in ICF/SNF
   - Eligibility/Income Protection Assistance
   - Case Management
3. Establish a statewide toll-free telephone number (hotline) for the purpose of providing information and referral.
4. Develop a comprehensive resource manual and guide to services for dementia patients and caregivers to be distributed to appropriate health and social service agencies and made available to family caregivers.
5. Distribute educational information to the general public, service providers and caregivers through the development, production, and use of television programs on educational television.
6. Develop and appropriately fund a continumm of services targeted to meet the needs of caregivers. This continuum should include the following:
   - Counseling:
     - Financial/estate planning
     - Legal planning-probate, conservatorship, durable power of attorney, guardianship
     - Emotional
   - Education:
     - Regarding the disease, progression, personal care, behavioral management
     - Regarding availability, eligibility, and access to support services
   - Support Groups
   - Respite Care:
     - Institutional based
     - In-home
     - Adult day care
     - Community based
   - Additional Support Services:
     - Case Management
     - Respite care — in-home and out-of-home
     - Transportation
     - Crisis services
     - Financial support
7. Provide technical assistance and financial support to community-based groups for the development of needed continuum of care services targeted for caregivers.
8. Designate the Oklahoma State Department of Health the "Lead Agency" and direct OSDH to develop and implement a core program which addresses a continuum of care designed to meet the special needs of Alzheimer's Disease and related disorders patients and caregivers.
9. Provide line item funding to implement this task at a level sufficient to provide manpower for service delivery.

In the Area of Legislation and Financial Arrangements

1. Develop an affordable legal assistance program for the indigent and patients on fixed incomes. (This includes assistance to patient and family caregivers.)
2. Provide public education on guardianships and alternatives.
3. Provide public education on the Oklahoma Guardianship Act and monitor the implementation of this Act.
4. Develop a public guardianship program for persons who are in need of guardians but unable to acquire one, operated out of the Attorney General's Office.
5. Establish demonstration projects on money management which could also train family caregivers.
6. Advocate for the establishment of guardianship training and the monitoring of required reporting.
7. The Oklahoma Mental Health Department should provide public education as to commitment procedures.
8. Establish advocates for those in need of assistance with commitment procedures.
9. Amend the Oklahoma Nursing Home Care Act (State Law 63-1-182) to address multiple levels of care, and to include standards which address specialized units (beds) for Alzheimer's Disease and other related dementias.
10. Develop and adopt by the Oklahoma Health Planning Commission standards for project review of specialized units (beds) of nursing home facilities for Alzheimer's Disease and other related dementias.
11. Develop financing of adequate reimbursement rates for home, community and institutional based programs willing and able to provide the appropriate programming and staffing needed to care for dementia patients.
12. Develop and finance adequate support services for the dementia patient and caregivers.
13. Develop and implement through state legislation consistent standards for the adult day care and home care industries.
14. Require the Oklahoma State Insurance Commission to assure that all insurance policies marketed in the state as long-term policies prohibit discrimination against patients with Alzheimer's Disease and other dementing illnesses.
15. Require the Oklahoma State Insurance Commission mandate that companies which market long-term care policies provide at least four hours of agent training and certification on long-term care.
16. Direct the State of Oklahoma to include long-term care insurance as an employee benefit option.
17. Direct the Oklahoma State Insurance Commission to provide incentives for companies to marketing long-term care insurance benefits to major employers.

RESOLUTION 7

(Not Adopted)

Introduced by: Council on Public and Mental Health
Robert M. Mahaffey, MD, Chairman
Subject: **Health Departments in Oklahoma**
Referred to: Reference Committee II

WHEREAS, Oklahoma physicians are dedicated to the enhancement of the public health in our state; and

WHEREAS, The State of Oklahoma through the State Department of Health has established an elaborate network of county health departments to provide for the public health; and

WHEREAS, The services offered by the state and local departments of health are vital to the well-being of all our citizens; and

WHEREAS, Physician cooperation in the health departments' programs is essential for their success; now therefore be it

Resolved, That the physicians of the Oklahoma State Medical Association and representatives of the state and local health departments work together to encourage regular communication at the local level between community physicians and health department officials in order to identify and work cooperatively toward solving problems pertaining to public health issues in their communities.

SUBSTITUTE RESOLUTION 7
(Adopted)

Resolved, That the physicians of the Oklahoma State Medical Association and representatives of the state and local health departments work together to encourage regular communication at the local level between community physicians and health department officials. The problem areas have been identified as follows:

1) Availability of services
2) Continuity of care
3) Attitudes of patients, physicians, and employees
4) Monetary concerns
5) Differing standards of care

RESOLUTION 8
(Not Adopted)

Introduced by: Council on Public and Mental Health
Robert M. Mahaffey, MD, Chairman
Subject: **Regional Indigent Care Authorities**
Referred to: Reference Committee II

WHEREAS, Oklahoma ranks eighth in the nation in the number of medically uninsured people; and

WHEREAS, The number of medically uninsured in Oklahoma is reported to be some 600,000 people; and

WHEREAS, Twenty-two percent of the non-elderly are medically uninsured in our nation; and

WHEREAS, There is a lack of adequate funding, administration and manpower to meet these needs at this time; now therefore be it

Resolved, That the physicians of the Oklahoma State Medical Association explore legislation to permit formation of regional indigent care authorities that would be allowed to contract for funds and assess and levy millage in order to meet these needs; and be it further

Resolved, That the Oklahoma State Medical Association also seek legislation that would increase funding and benefits for Medicaid; and be it further

Resolved, That the Oklahoma State Medical Association work with the State Insurance Commissioner, the insurance industry, and employers toward making medical insurance available to all workers regardless of the number of people employed.

RESOLUTION 9
(Not Adopted)

Introduced by: Council on Public and Mental Health
Robert M. Mahaffey, MD, Chairman
Subject: **Education on Indigent Care Issues**
Referred to: Reference Committee II

WHEREAS, The State of Oklahoma ranks eighth nationally with some 600,000 citizens medically uninsured; and

WHEREAS, There may be among Oklahoma health professionals myths about the care of indigents; and

WHEREAS, Many physicians are unaware of the needs of indigent care facilities for physician manpower, medical supplies, medications, and medical equipment; now therefore be it

Resolved, That the Oklahoma State Medical Association make a concerted effort to educate its members on these issues concerning the care of indigent patients.

RESOLUTION 10
(Adopted as Amended)

Introduced by: Council on Public and Mental Health
Robert M. Mahaffey, MD, Chairman
Subject: **Retired Physicians and Indigent Care**
Referred to: Reference Committee II

WHEREAS, There are qualified retired physicians and other health professionals who would volunteer some time for the care of the indigent if they were provided liability protection; now therefore be it

Resolved, That the Oklahoma State Medical Association, in cooperation with other health professional societies, survey their retired and active members in order to ascertain their willingness to volunteer some time serving in clinics for the indigent; and be it further

Resolved, That if these studies so indicate, that appropriate legislative measures be pursued to provide immunity or other liability protection for those professionals serving as volunteers in clinics for indigent and low income patients.

RESOLUTION 11
(Adopted)

Introduced by: Council on Public and Mental Health
Robert M. Mahaffey, MD, Chairman
Subject: **Commendation to Doctor Hulsey/Environmental Projects**
Referred to: Reference Committee II

WHEREAS, A clean, safe environment is essential for the good health and long life of all Americans; and

WHEREAS, An increasing population, technology and industrialization threaten that environment and all the life it sustains; and

WHEREAS, An Oklahoma physician has dedicated his life to preserving and enhancing our environment and in so doing has become a national leader in the struggle to preserve our air, water and forests which nourish both man and beast so that future generations may enjoy and benefit from these natural wonders; now therefore be it

Resolved, That the members of the Oklahoma State Medical Association commend and congratulate their colleague, George H. Hulsey, MD, Norman, Oklahoma, on his election as President of the National Wildlife Federation; and be it further

Resolved, That Oklahoma physicians through the Oklahoma State Medical Association offer their assistance for potential projects that would benefit the environment and the public health in Oklahoma.

RESOLUTION 12
(Adopted as Amended)

Introduced by: Council on Public and Mental Health
Robert M. Mahaffey, MD, Chairman
Subject: **Indigent Projects**
Referred to: Reference Committee II

On the house floor, Enid delegates Michael Z. Rickman, MD, Donald C. Karns, MD, and John A. McIntyre, MD, study their notes.

WHEREAS, Physicians have a moral and ethical responsibility to care for those who are ill, regardless of their ability to pay; and

WHEREAS, Oklahoma physicians have a tradition of treating all who require their services when they are ill or injured; and

WHEREAS, Recent studies indicate that some 600,000 Oklahoma citizens are without medical insurance; and

WHEREAS, Oklahoma physicians are rightly concerned about this issue; now therefore be it

Resolved, That the Oklahoma State Medical Association encourage and recommend that all Oklahoma physicians continue to treat indigent and medically uninsured patients in their offices; and be it further

Resolved, That the Oklahoma State Medical Association encourage and recommend that Oklahoma physicians continue to donate their time and services to help care for the indigent and uninsured; ~~in clinics and other settings established to meet such needs;~~ and be it further

Resolved, That the Oklahoma State Medical Association ask local county medical societies to identify reputable entities which provide indigent care in their communities, ascertain the needs of these facilities, establish the communication necessary to address their problems, and report such information to the OSMA in order to establish a statewide clearinghouse of services available to the indigent and uninsured.

RESOLUTION 13
(Not Adopted)

Introduced by: Norman L. Dunitz, MD
Subject: **Physicians' Rights**
Referred to: Reference Committee I

WHEREAS, The physicians of this state are subject to third-party decisions regarding their method of care, fees, duration of care, etc., in what often appears to be an arbitrary and capricious fashion; and

WHEREAS, These third-party decisions and charges should, for the patient's benefit, be based upon good medical concepts, knowledge and opinions; and

WHEREAS, There is no way for the responsible attending physician to know whether decisions made by third parties have any foundation based upon the above criteria; and

WHEREAS, These decisions can and often do injure the physician/patient relationship; now therefore be it

Resolved, That all organizations acting as third-party medical reviewers for any organization or entity offering health insurance coverage annually file with the State Insurance Commissioner the names and qualifications of those who are actually performing the medical review.

SUBSTITUTE RESOLUTION 13
(Adopted)

Resolved, That the OSMA petition the State Insurance Commissioner to obtain details of the medical review and appeals process performed by all Third Party Carriers, as well as the specific qualifications of all individuals performing review functions; and be it further

Resolved, That this information be made available to all physicians in the state upon request.

RESOLUTION 14
(Not Adopted)

Introduced by: Ed L. Calhoon, MD, Beaver, OK
Subject: **Physician Advertising**
Referred to: Reference Committee III

WHEREAS, Oklahoma physicians have demonstrated their compassion through their long tradition of caring for the poor, underprivileged and other underserved citizens; and

WHEREAS, Many groups have accused, without documentation, the medical profession of abuse in dealing with the Medicare and Medicaid bureaucracies; and

WHEREAS, The record indicates that physician participation in Medicaid, acceptance of Medicare assignment both for VIP patients and others, and charitable work in schools, nursing homes and other areas, has saved the State of Oklahoma many millions of dollars; now therefore be it

Resolved, That the Oklahoma State Medical Association inform the people of Oklahoma of the charity and compassionate acts of Oklahoma

physicians through advertisements in state media; and be it further

Resolved, That these advertisements educate both the public and the Oklahoma Legislature of the need for relief from malpractice claims, particularly those claims made by patients seen at no charge or in other charitable settings.

SUBSTITUTE RESOLUTION 14

(Adopted)

Resolved, That the Oklahoma State Medical Association engage in an active program to enhance the image of physicians, including educating the people of Oklahoma of the charitable and compassionate acts of Oklahoma physicians and their ongoing role as patient advocates.

RESOLUTION 15

(Adopted as Amended)

Introduced by: Council on Medical Education
Irwin H. Brown, MD, Chairman
Subject: **Physician Support of the Nursing Profession**
Referred to: Reference Committee II

WHEREAS, The Oklahoma State Medical Association and the Oklahoma Nurses Association share concern for the health and welfare of Oklahomans; and

WHEREAS, Health care services must be available in all areas of the state for the proper delivery of health care; and

WHEREAS, The OSMA has placed a priority on continuing to work with the Oklahoma Nurses Association; and

WHEREAS, The OSMA recognizes the need for more registered nurses and licensed pratical nurses at patient bedside; now therefore be it

Resolved, That the OSMA continue to work with the ONA to provide the following:

1) Increase state funds to at least $250,000 for the Nursing Student Assistance Program;

2) Increase the allocation of state funds to provide for increased number of graduates of nursing education programs by at least 25 percent each year;

3) Support economic and professional incentives to attract and retain high quality nurses to provide nursing care services;

4) Address the public perception of nursing in order to attract qualified individuals into the nursing profession;

5) Support salary structures that reward nurses for their responsibility, educational preparation, experience and performance;

6) Recognize nursing's contribution to patient care by continuing to include ~~including~~ nurses on appropriate hospital medical committees;

7) Establish professional practice committees with nurse and physician representatives to improve professional relationships; and

8) Work with nurses in the health care setting for the reallocation of resources and design of new staffing systems in order to increase the time that registered nurses and licensed practical nurses spend with patients.

(Late Resolution)

RESOLUTION 16

(Not Adopted)

Introduced by: Tulsa County Medical Society
Theodore J. Brickner, Jr., MD, President
Subject: **Physician Legislative Districts**
Referred to: Reference Committee III

WHEREAS, Whereas, Political involvement for physician members of the Oklahoma State Medical Association has become increasingly important; and

WHEREAS, In order to effectively communicate with elected officials about specific issues, it is necessary to know in which legislative districts OSMA members vote; now therefore be it

Resolved, That computer capabilities be established by OSMA to efficiently and expeditiously identify physician members by their legislative districts, in order to increase the effectiveness of participation in the political process by members of the Oklahoma State Medical Association.

SUBSTITUTE RESOLUTION 16

(Adopted)

Resolved, That the Oklahoma State Medical Association enhance its efforts and expeditiously identify physician members in their legislative districts; and be it further

Resolved, That the Oklahoma State Medical Association members cooperate in obtaining this data by providing their home addresses and names of their legislators.

(Late Resolution)

RESOLUTION 17

(Adopted)

Introduced by: Tulsa County Medical Society
Theodore J. Brickner, Jr., MD, President
Subject: **VIP Program**
Referred to: Reference Committee I

WHEREAS, The VIP Program of Tulsa County Medical Society was established to assist low-income, elderly patients; and

WHEREAS, The VIP Program has received national attention as an opportunity to demonstrate the concern of physicians for low-income, Medicare recipients; and

WHEREAS, The VIP Program was adopted as a statewide program in 1987 by the Oklahoma State Medical Association; now therefore be it

Resolved, That the Oklahoma State Medical Association take an active role in developing the VIP Program throughout the state while making a strong, concerted effort to enroll the majority of eligible patients and to educate Oklahoma physicians about the VIP Program.

(Late Resolution)

RESOLUTION 18

(Adopted)

Introduced by: Tulsa County Medical Society
Theodore J. Brickner, Jr., MD, President
Subject: **OALA Coalition Reports**
Referred to: Reference Committee I

WHEREAS, The Oklahomans Against Lawsuit Abuse Coalition was established to develop and pass legislation for tort reform; and

WHEREAS, Physician members of the Oklahoma State Medical Association were assessed over $500,000 to fund this effort; and

WHEREAS, No significant progress has been made by the coalition since its beginning; now therefore be it

Resolved, That a report on the progress of the coalition be provided the OSMA membership including anticipated future efforts and a clear and concise accounting of the funds being expended for this effort.

(Late Resolution)

RESOLUTION 19

(Adopted)

Introduced by: Tulsa County Medical Society
Theodore J. Brickner, Jr., MD, President
Subject: **Congressman Mike Synar**
Referred to: Reference Committee III

WHEREAS, Congressman Mike Synar of Oklahoma has introduced in the United States Congress a bill, titled the Children's Health Protection Act, that would limit tobacco companies advertising of tobacco products; and

WHEREAS, Congressman Synar has individually taken the lead nationally in attempting to contain the use of tobacco products by young people in this country; and

WHEREAS, Congressman Synar's efforts have been endorsed by several health organizations including the American Heart Association, the American Lung Association, the American Cancer Society, and the American Medical Association; now therefore be it

Resolved, That the Oklahoma State Medical Association publicly recognize Congressman Synar for his strong stand against tobacco advertising and his support of the public's health.

(Late Resolution)

RESOLUTION 20

(Not Adopted)

Introduced by: Paul A. Byrne, MD, Tulsa
Subject: **AMA Voluntary Membership**
Referred to: Reference Committee III

WHEREAS, It is mandated that every member of the Tulsa County Medical Society belong to the American Medical Association; and

WHEREAS, Many positions of the American Medical Association are not acceptable to many members of the Tulsa County Medical Society; now therefore be it

Resolved, That hereafter, membership in the American Medical Association be voluntary.

(Late Resolution)

RESOLUTION 21

(Adopted and Referred to OSMA Board of Trustees)

Introduced by: Oklahoma County Medical Society
M. Boyd Shook, MD, President
Subject: **Utilization Parameters**
Referred to: Reference Committee II

WHEREAS, Third-party carriers are increasingly requiring utilization review of physician claims; and

WHEREAS, Requirements for utilization review are often determined with no physician input; and

WHEREAS, Requirements for utilization review often call for more information than is necessary; and

WHEREAS, Imposition of utilization requirements bear no relation to quality; and

WHEREAS, Increasing paperwork and telephone work increases costs of practice and therefore costs of medical care; and

WHEREAS, Insurance salesmen rarely divulge to employers and potential purchasers the full extent of utilization review; and

WHEREAS, Patients, physicians, and employers all suffer from this burgeoning bureaucracy; now therefore be it

Resolved, That the Oklahoma State Medical Association seek a solution to this problem by:

1) Developing guidelines for acceptable utilization review;

2) Urging legislation to protect patients' rights and physicians' rights regarding utilization parameters;

3) Developing a mechanism for reporting and acting upon inappropriate requests from third-party administrators;

4) Developing a resolution to present to the AMA House of Delegates to enhance this idea and seek AMA policy to parallel that of OSMA.

(Late Resolution)

RESOLUTION 22

(Not Adopted)

Introduced by: Council on Medical Services
Ronald S. Barlow, MD, Chairman
Subject: **BNDD Inspections**
Referred to: Reference Committee II

WHEREAS, The Oklahoma Bureau of Narcotics and Dangerous Drugs (BNDD) is a state agency required by state law (Title 63) to register all professionals who handle narcotics; and

WHEREAS, The BNDD is statutorially enabled to deny, suspend or revoke the narcotics permit of a professional who violates specific legal requirements; and

WHEREAS, The BNDD investigators have the legal right to enter a physician's office to inspect the various aspects of registration, handling, storing, and prescribing of narcotics; and

WHEREAS, The OSMA supports the intent of the BNDD law to protect the public; now therefore be it

Resolved, That the OSMA monitor the investigative activities of the BNDD to assure fair treatment of the physician and staff; and be it further

Resolved, That the OSMA will respond to the BNDD on any allegations of unprofessional conduct by BNDD investigators; and be it further

Resolved, That the physicians of Oklahoma request that investigations be done in a manner that does not interdict the proper medical use of controlled drugs in the compassionate treatment of terminal illnesses and painful disabilities.

SUBSTITUTE RESOLUTION 22

(Adopted)

Resolved, That the physicians of Oklahoma request that investigations be done in a manner that does not interdict the proper medical use of controlled drugs in the compassionate treatment of terminal illnesses and painful disabilities; and be it further

Resolved, That the OSMA educate the membership to the BNDD laws and regulations concerning handling, storage, and recordkeeping of narcotics and the educational programs available through the BNDD.

(Late Resolution)

RESOLUTION 23

(Adopted)

Introduced by: OSMA Board of Trustees
Subject: **Continuing Medical Education**
Referred to: Reference Committee III

WHEREAS, Medical technology and the expansion of medical knowledge expands in quantum growth; and

WHEREAS, Medical education is a continuum that begins with medical school and ends with retirement; and

WHEREAS, Every physician has an obligation to himself and his patients to remain current on the latest developments in his/her medical practice; and

WHEREAS, Medical specialty societies and the AMA have developed medical education guidelines which give some assurance of continuing competency and achieves continued certification or recognition; and

WHEREAS, Some legislators and regulators have sought to mandate continuing medical education requirements as a condition of licensure; now therefore be it

Resolved, That the OSMA House of Delegates strongly encourage its members and all physicians to voluntarily participate and meet or exceed the education requirements of their respective medical specialty societies or those of the AMA for receipt of the Physician Recognition Award.

RESOLUTION OF COMMENDATION
Mark R. Johnson, MD

(Adopted)

Introduced by the Board of Trustees of the Oklahoma State Medical Association

WHEREAS, Mark R. Johnson, MD, has served as editor-in-chief of the *Journal of the Oklahoma State Medical Association* from October 1968 to the present, and is now retiring from that position, and has been accorded the title editor emeritus; and

WHEREAS, His two decades of leadership, service, and dedication to excellence as editor-in-chief have elevated the *Journal* to a position of prominence among state journals, earning national awards on at least four separate occasions; and

WHEREAS, His astute, provocative editorials have enlightened, agitated, and entertained his readers with inimitable style, wit, and vision; and

WHEREAS, His passionate defense of good medical practice against all manner of encroachment has been unwavering and unparalleled, as seen in both his editorial stance and his recently completed tenure as secretary of the Oklahoma State Board of Medical Licensure and Supervision; and

WHEREAS, His personal and professional integrity, his compassion and concern for his patients, and his dedication to the fundamental principles of good medical practice are self-evident and serve as outstanding examples to physicians everywhere; now, therefore, be it

Resolved, That the OSMA House of Delegates hereby extend its heartfelt appreciation to Dr. Johnson for his outstanding contributions to medical practice in Oklahoma; and be it further

Resolved, That the Mark R. Johnson, MD, Practitioner of the Year award hereby be established and henceforth presented annually to that physician who best exemplifies the qualities of humility, dedication, and service in his or her practice of medicine.

Reference Committee I

REPORTS TO THE HOUSE OF DELEGATES

In the House of Delegates, Theodore J. Brickner, Jr., MD, Tulsa, delivers the report of Reference Committee I.

Report of REFERENCE COMMITTEE I

Presented by: Theodore J. Brickner, Jr., MD, Chairman

Mr. Speaker and Members of the House of Delegates:

Reference Committee I considered a number of items that were assigned to it and heard excellent testimony. Reference Committee I submits the following report:

(1) Report of the Board of Trustees

Your Reference Committee commends the Board for its diligent work and decisions made on behalf of the Association and would especially like to commend Dr. Jerry L. Puls.

Recommendation:

Mr. Speaker, your Reference Committee recommends that the Report of the Board of Trustees be filed for information.

(2) Supplemental Report of the Board of Trustees

The Supplemental Report of the Board of Trustees contains an omission of words on page 2, line 5. Four words should be added following the word "medically" to read "of reply and appeal to each medically unnecessary denial and the."

The report also reflects on page 3, a recommendation of the OSMA Editorial Board that the dues for resident physician members of the OSMA be set at $21 (currently, resident physicians pay $10 a year) in order that they may receive the OSMA JOURNAL. The explanation supporting the recommendation of the OSMA Editorial Board was insufficient and the motion died for lack of a second.

Recommendation:

Mr. Speaker, your Reference Committee recommends that the state dues for resident physicians be set at $21 in order that the resident physicians may receive the OSMA JOURNAL.

Mr. Speaker, your Reference Committee recommends that the Supplemental Report of the Board of Trustees be adopted as amended.

(3) Report of the Secretary-Treasurer and Report of the Committee on Appropriations and Auditing

The Reference Committee would like to express its sincere appreciation to Dr. James D. Funnell for his prudent oversight as Secretary-Treasurer of the Oklahoma State Medical Association.

Recommendation:

Mr. Speaker, your Reference Committee recommends that the Report of the Secretary-Treasurer and Report of the Committee on Appropriations and Auditing be adopted.

(4) Report of the Council on Planning and Development

Reference Committee I reviewed an excellent report prepared by Council Chairman M. Joe Crosthwait, M.D. The report reflects a number of recommendations that were accepted in toto by this reference committee.

Recommendation:

Mr. Speaker, your Reference Committee recommends that the Report of the Council on Planning and Development be adopted.

(5) Report of the Physicians Liability Insurance Company

Reference Committee I was presented with an excellent report of the Physicians Liability Insurance Company. Your Reference Committee wishes to commend the PLICO Board of Directors for their administration of our insurance company.

Recommendation:

Mr. Speaker, your Reference Committee recommends that the Report of the Physicians Liability Insurance Company be filed for information.

(6) Report of the Oklahoma State Medical Association Auxiliary

Mr. Speaker, your Reference Committee would like to commend Mrs.

Jan Storms, OSMA Auxiliary President, for her excellent leadership and dedication, not only to the Auxiliary, but also her support of the physicians throughout Oklahoma.

Recommendation:

Mr. Speaker, your Reference Committee recommends that the Report of the Oklahoma State Medical Association Auxiliary be filed for information.

(7) Report of the Return To Reason Coalition

Mr. Speaker, Reference Committee I was presented with an excellent overview of the Oklahomans Against Lawsuit Abuse Coalition activities by the Executive Director, Lyle Kelsey. As the tort reform issue is of importance to all Oklahoma physicians, your Reference Committee wishes to commend the Coalition's efforts. In light of the assessment levied on OSMA members, this reference committee recommends that the Coalition report its activities, as well as the reporting of its financial status, to the Association on a more regular basis.

Recommendation:

Mr. Speaker, your Reference Committee recommends that the Report of the Return to Reason Coalition be filed for information.

(8) Resolution 5 — Voting Privileges for Medical School Deans

Recommendation:

Mr. Speaker, your Reference Committee recommends that Resolution #5 regarding voting privileges for medical school deans not be adopted and the following substitute resolution be adopted:

Resolved, That the OSMA Constitution and Bylaws be amended so as to grant voting privileges in the OSMA House of Delegates, automatically and without need of county election, to the deans or interim deans of the Oklahoma University School of Medicine, University of Oklahoma College of Medicine-Tulsa, and Oral Roberts School of Medicine, provided they are physician members in good standing of their County Medical Society, the Oklahoma State Medical Association, and the American Medical Association.

(9) Resolution 13 — Physicians' Rights

Recommendation:

Mr. Speaker, your Reference Committee recommends that Resolution 13 regarding physicians' rights not be adopted and the following substitute resolution be adopted:

Resolved, That the OSMA petition the State Insurance Commissioner to obtain details of the medical review and appeals process performed by all Third Party Carriers, as well as the specific qualifications of all individuals performing review functions; and be it further

Resolved, That this information be made available to all physicians in the state upon request.

Seated on the house floor are (from left) Gary W. Rahe, MD, and Gary F. Strebel, MD, Oklahoma City; and Joseph L. Krueger, MD, Altus.

(10) Late Resolution 17 — VIP Program

Mr. Speaker, your Reference Committee discussed Resolution 17 regarding the VIP Program, presented by Dr. G. Lance Miller. Your Reference Committee wishes to commend the Tulsa County Medical Society for their succcess with the VIP Program and recommends that these efforts be mirrored by the OSMA on a statewide basis.

Recommendation:

Mr. Speaker, your Reference Committee recommends that Resolution 17 regarding the VIP Program be adopted.

(11) Late Resolution 18 — OALA Coalition Reports

Mr. Speaker, Reference Committee I discussed at length Resolution #18, OALA Coalition Reports. The resolution, presented by Lee Newcomer, M.D., basically requests that a report on the progress of the coalition and its activities be reported to the OSMA membership. Your Reference Committee wholeheartedly concurs with this resolution and recommends its adoption.

Recommendation:

Mr. Speaker, your Reference Committee recommends that Resolution 18 regarding OALA Coalition Reports be adopted.

Mr. Speaker, your Reference Committee recommends adoption of the Report of Reference Committee I, as a whole.

Mr. Speaker, this concludes the report of the Reference Committee I. Your Reference Committee wishes to thank all who participated in the hearing and contributed to the preparation of this report. As Chairman of this Reference Committee, I would like to express my appreciation to the committee members and staff for their time and effort.

Respectfully submitted,
Theodore J. Brickner, MD,
Tulsa, Chairman
Jay L. Bryngelson, MD,
Bartlesville
William C. Stone, MD, Tulsa
Gordon H. Deckert, MD,
Oklahoma City
A. Munson Fuller, MD, Tulsa
Robert Baker, Staff
Debbie Hinson, Staff

Report of the BOARD OF TRUSTEES

Subject: **Annual Report**
Presented by: Jerry L. Puls, MD, Chairman
Referred to: Reference Committee I

Introduction

The OSMA Board of Trustees has completed three of its regular quarterly meetings for organizational year 1988-89. The fourth meeting, or annual meeting of the board is being held in conjunction with the 1989 annual meeting of the association in Tulsa, Oklahoma at the Sheraton Kensington Hotel. The proceedings of the annual board meeting will be contained in the Supplemental Report of the Board of Trustees.

During the past year, the board met in regular sessions on August 21, and November 20, 1988, and February 5, 1989. A quorum was certified for each meeting with an average of seven officers, 17 trustees or alternate trustees, and seven AMA delegates and alternate delegates present.

Council and Committee Reports

During each of its meetings, the OSMA Board of Trustees heard reports from each of the association's councils, committees and sections. As these entities also report directly to the House of Delegates, they will not be reported here.

PLICO, OFPR, OALA and Auxiliary Reports

Throughout the year, the OSMA Board of Trustees heard reports from PLICO, OALA, OFPR and the Auxiliary during each of its three quarterly meetings. As these organizations will report directly to the House of Delegates, they will not be reported here.

1988 A. H. Robins Award

During the August 21, 1988 Board of Trustees meeting, the 1988 A. H. Robins Award for Community Service was presented to George W. Prothro, MD, Tulsa.

1988 Donald J. Blair Friend of Medicine Award

The first recipient of the Donald J. Blair Friend of Medicine Award (formerly named the Outstanding Layman Award) was Mr. Jim Loy, Administrator of Southern Plains Medical Center in Chickasha. The presentation, made during the August 21 board meeting, was especially touching as the family of Mr. Blair, his wife Jan and daughters Linda and Betsy were in attendance to present the award.

1987 Outstanding Layman Award

Due to scheduling conflicts, the board was not able to present the 1987 Outstanding Layman Award to Mr. Lawrence Rember until the August 21, 1988 meeting. Mr. Rember, former Alumni Association Director for the University of Oklahoma, was most appreciative.

Report from the Dean's Search Committee

Dr. Gordon Deckert, Chairman of the Search Committee for a new medical school dean for the University of Oklahoma College of Medicine, was present at the August 21, 1988 board meeting and asked for the trustees' involvement. Subsequently, Edward N. Brandt, MD, was named the new Dean for the University of Oklahoma College of Medicine.

OSMA Child Abuse Project

Following the request and guidance of OSMA President Ray V. McIntyre, MD, the OSMA board voted to support and explore the initiation of a child abuse task force. Following the August board meeting, legislation was drafted, and Doctor McIntyre and staff spent countless hours providing the Legislature with testimony and information to create a statewide corps of physician examiners for child abuse cases. Child abuse legislation is presently in the House of Representatives, having passed the Senate as a whole earlier in the year.

OSMA Group Disability Program

During its November 20, 1988 meeting, the board approved a proposal from C. L. Frates and Company to upgrade the OSMA Group Disability Program. Under the new policy, current physicians in the group would be rolled into the new policy which has better benefits and requires no underwriting.

Special Legislative Constituent "Hotline"

During the February 5 board meeting, Doctor McIntyre proposed that the OSMA board approve the creation of a telephone hotline that would allow legislators to assist their constituents in obtaining medical care. The board approved the creation of this hotline in an additional attempt to convey to the Legislature our sincere attempts to alleviate any questions surrounding access to care. The board concurs with Doctor McIntyre that this proposal would enhance the OSMA's efforts with the VIP Program, as well as possibly negate arguments for mandating assignment in Oklahoma.

Appointment of New JOURNAL Editor-In-Chief

The February 5 meeting presented the Board of Trustees with a most difficult task, replacing Mark R. Johnson, MD, as Editor-in-Chief. Doctor Johnson, whose resignation comes following 20 years of service, will be sorely missed.

Following nominations, the board moved, seconded and carried the following: That Ray V. McIntyre, MD, be appointed Editor-in-Chief of the OSMA JOURNAL; that Robert L. Scott, MD, Tulsa, be appointed as JOURNAL Editor to replace the fine work of Donald L. Brawner, MD; and that Harris D. Riley, Jr., MD, Oklahoma City, be reappointed JOURNAL Editor.

Life Membership Awards

The following physicians have been awarded life membership in the Oklahoma State Medical Association through application from component societies, and with the approval of the association's Board of Trustees:

August 21, 1988
Frank H. Austin, MD, Lawton
Glenn W. Cosby, MD, Miami
F. Paul Kosbab, MD, Tulsa
William A. Matthey, MD, Lawton
Melton P. Meek, MD, Lawton
Floyd Simon, MD, Clinton

November 20, 1988
William L. Bond, MD, Oklahoma City
Charles E. Delhotal, MD, Oklahoma City
Glen Floyd, MD, Bartlesville
John Gilbert, MD, Ponca City

Thomas C. Glasscock, MD, Ponca City
Jerold D. Kethley, MD, Shawnee
Donald F. Mauritson, MD, Tulsa
J. Thermon McInnis, MD, Oklahoma City
John R. McInnis, MD, Oklahoma City
Robert A. McLauchlin, MD, Oklahoma City
Vernon C. Merrifield, MD, Ponca City
E. Norris Robertson, Jr., MD, Oklahoma City
Lawrence Stream, MD, Oklahoma City
James F. Tagge, MD, Enid
Harry C. Wolohon, MD, Oklahoma City
Edwin C. Yeary, MD, Ponca City

February 5, 1989
G. Sam Collins, MD, Oklahoma City
Robert S. Davis, Jr., MD, Chickasha
Charles, G. Fullenwider, MD, Muskogee
Jed E. Goldberg, MD, Tulsa
Charles S. Graybill, MD, Lawton
Warren G. Gwartney, MD, Tulsa
Lynn H. Harrison, MD, Oklahoma City
Marvin H. Hird, MD, Muskogee
Leonard L. Kishner, MD, Tulsa
James P. Luton, MD, Oklahoma City
George F. McDonnold, MD, Oklahoma City
J. D. McGovern, MD, Norman
George C. Moore, MD, Ponca City
Houston F. Mount, MD, Tulsa
Edward K. Norfleet, MD, Vinita
John Penrod, MD, Lawton
Cooper D. Ray, MD, Altus
Arvin Craig Roberson, MD, Anadarko
James H. Rollins, MD, Tulsa
N. L. (Bill) Shadid, MD, Oklahoma City
Tom C. Sparks, MD, Ardmore
Emil F. Stratton, MD, Muskogee
William K. Walker, MD, Marlow
Theodore R. Wenger, MD, Tulsa
Frederick S. Wetzel, Jr., MD, Tulsa
Robert B. Williams, MD, Tulsa

Respectfully submitted,
Jerry L. Puls, MD, Chairman
OSMA Board of Trustees

Supplemental Report of the BOARD OF TRUSTEES

Subject: **Supplemental Report**
Presented by: Jerry L. Puls, MD, Chairman
Referred to: Reference Committee I

Mr Speaker and Members of the House:

The Board of Trustees met at its Annual Meeting yesterday, May 4, at 1:45 pm, and this Supplemental Report reviews the actions taken by the board at this meeting. This report will be referred to Reference Committee I to be considered along with the Annual Report of the Board of Trustees, which was included in the delegates' handbook.

The board approved the minutes of the Feburary 5 meeting as presented.

Mrs. Jan Storms, outgoing Auxiliary President, expressed her thanks to the OSMA and to its Board of Trustees for their generosity and support. She then reviewed the Auxiliary's activities during the past year and announced that Mrs. Sherry Strebel will soon be elected National Secretary of the AMA Auxiliary, and Mrs. Mary Ann Deen is currently the AMAA's Southern Director. She also reviewed the various health projects taken on by the Auxiliary this past year and announced an increased membership by 41. Mrs. Storms closed by commending the OSMA staff, and especially Ms. Judy Lake, for support throughout the year.

Dr. Ray V. McIntyre presented his last report to the board as outgoing President of OSMA. He began his report by complimenting the OSMA staff. Doctor McIntyre stated that the Oklahoma State Employees Group Insurance Board health insurance plan was a problem that caused much activity and energy to be expended by the OSMA this year. It appears that a fundamental restructuring of the plan will be necessary. The OSMA will continue to offer the Legislature its advice in directing a rational plan that will be fair to both physicians and patients.

Doctor McIntyre stated that medical economics in rural Oklahoma continues to be a problem; however, recent initiatives by the OSMA with the help of the Oklahoma Congressional Delegation showed promise. It is possible that real change in reimbursement for rural physicians could occur within 2 to 3 years. Harrassment of physicians continues to be an ongoing problem, specifically medically unnecessary letters and the threat of mandatory assignment. The OSMA must continue to support a policy of reply and appeal to each medically unnecessary letter. The association also must be prepared to debate in any forum the problem of mandatory assignment.

Tort reform remains a pressing issue. Some hope in this area could come from the Governor's Constitutional Revision Study Commission. If that initiative fails, the OSMA must continue to press for the redress of this injustice in the Oklahoma Legislature or by means of an initiative petition.

Doctor McIntyre was pleased to report progress made on SB 73, which would create the State Board of Child Abuse Investigation. As the children of Oklahoma need this program, the OSMA must continue to work for the passage of this bill during the next legislative session.

Problems facing Oklahoma medicine remain numerous. Doctor McIntyre expressed confidence that his successor, Dr. John R. Alexander, will find the resources and strength of the OSMA to help in working to solve these problems.

Dr. James D. Funnell, Secretary-Treasurer, cited OSMA's Audit Report prepared by Price Waterhouse, the Quarterly Report, and the proposed 1989 budget, and presented his report to the board. The written report is included in the handbook under Reference Committee I.

Doctor Funnell noted that the accountants are still attempting to separate the OSMA and PLICO accounts, as charged last year by the House of Delegates. This endeavor will be continued, he stated, until completed.

Discussion took place concerning OSMA membership, and it was noted that approximately 20% of physicians are not members. Mr. Bickham explained that a detailed study has been done, and a major membership drive will take place this year. He also agreed that a detailed review of the

OSMA membership would be valuable to the board.

Doctor Puls reported that Dr. C. Alton Brown would present the annual PLICO Report during the Closing Session of the House of Delegates. This report has been assigned to Reference Committee I.

The Report of the Oklahoma Foundation for Peer Review was assigned to Reference Committee I, and no verbal report was presented.

James G. Gavin III, MD (l), receives a congratulatory embrace from C. Alton Brown, MD, who has just installed Dr Gavin as new chief of the Diabetes Section at the University of Oklahoma Health Sciences Center.

Mr. David Bickham, OSMA's Executive Director, presented his report. He first cited a Resolution of Commendation for Dr. Mark R. Johnson, wherein Doctor Johnson is praised for his serving as Editor-in-Chief of the OSMA JOURNAL for 20 years, and establishing the Mark R. Johnson, MD, Practitioner of the Year Award. This special resolution was accepted by the Board of Trustees, to be forwarded to the House of Delegates.

Mr. Bickham then proposed that the building once occupied by the OFPR be prepared for new tenants and that the wooded area north of the OSMA parking lot be cleaned up, the cost of which would amount to approximately $15,000, and requested approval of the expenditure. The board approved this proposal.

Mr. Bickham then discussed a proposal for charging Resident members dues of $21 each per year, which would in turn give them a year's subscription to the OSMA JOURNAL. A motion in favor of the proposal failed for lack of a second.

He then cited a resolution forwarded last year from the house to the board concerning continuing medical education, submitted by the Oklahoma Academy of Family Physicians. The board voted to rewrite the resolution for submission to the House of Delegates.

Mr. Bickham then distributed a proposed rule by the Board of Medical Licensure, whereby board certified physicians must submit evidence of completion of all requirements for certification. Mr. Bickham announced that the public hearing will take place on May 11, and that this proposal is in keeping with the AMA and the specialty societies.

He then announced that the OSMA's incoming WATS line will also be used for the "VIP Hotline" approved by the board at its February meeting. This service, he noted, will be in place within the next 30 days.

Discussion took place concerning the proposal for a phone bank, consisting of up to six additional incoming WATS lines for membership recruitment, public relations, and fund-raising. The board advised a further study of this concept.

Mr. Bickham noted a letter from Tulsa County Medical Society submitting Dr. Theodore J. Brickner, Jr., for a position on the Board of Medical Licensure and Supervision, succeeding Dr. Rollie E. Rhodes, Jr., whose term expires in July, 1989. The board moved to forward his name to the Governor for consideration.

The board voted to submit the following nominees for OFPR Board positions for consideration by the OFPR:

#7, Bruce C. Stoesser, MD, Tulsa; #8, Clarence Robison, Jr., MD, Oklahoma City; #11, Gary W. Rahe, MD, Oklahoma City; and #12, Norman A. Cotner, MD, Grove.

The board also voted to submit the following candidates for consideration by the House of Delegates for positions on the PLICO Board of Directors:

*John R. Alexander, MD, Tulsa
*Ed L. Calhoon, MD, Beaver
Raymond L. Cornelison, Jr., MD, Midwest City
*Billy R. Goetzinger, MD, Oklahoma City
*Ray V. McIntyre, MD, Kingfisher
*Floyd F. Miller, MD, Tulsa

*incumbents

The board selected Mr. David Bickham as the 1989 recipient of the Donald J. Blair Friend of Medicine Award, and voted Dr. Charles E. Green, Lawton, as the 1989 recipient of the A. H. Robins Award for Community Service. These awards will be presented at the August Board of Trustees meeting.

Much discussion took place concerning AMA Dues Commissions to county medical societies. Mr. Bickham discussed a proposal, whereby certain county medical societies would receive a commission of 2.0% for dues received by OSMA no later than January 15; 1.75% received by February 15; 1.25% if received by March 15; and .75% after March 15, providing they meet timely transfer and reporting requirements. The board approved the proposal, and further negotiations will take place with TCMS, OCMS, and other county societies interested in the proposal.

The board accepted for Business of the House of Delegates:

- Resolution of Commendation — Mark R. Johnson, MD
- Report of the President-Elect
- Attachments for the Report of the Oklahomans Against Lawsuit Abuse Coalition
- Attachments for the Report of the Council on State Legislation
  - Status Reports on Bills
  - Status Summary of the State PPO
  - Copy of HJR 1031
  - Report on the Medicare Risk Contract Programs
- Resolution No. 15 — Physician Support of the Nursing Profession
- Late Resolution No. 21 — Utilization Parameters
- Late Resolution No. 22 — BNDD Inspections

The board elected Dr. Jerry L. Puls, Tulsa, for another term as Chairman of the Board of Trustees, and Dr. Sara

R. DePersio as Vice-Chairman of the Board.

The following Life Memberships were approved:

Donald L. Brawner, MD, Tulsa
Everette E. Cooke, MD, Oklahoma City
Myron A. Cordum, MD, Oklahoma City
George R. Krietmeyer, MD, Tulsa
A. C. Lisle, Jr., MD, Oklahoma City
Jesse S. Little, MD, Norman
Theodore Turnbull, MD, Tulsa
Ethan A. Walker, Jr., MD, Rockville, MD
Walter Wicker, Jr., MD, Kingston

Dr. Larry L. Long, Speaker of the House, reviewed the election process for the board.

The Board of Trustees adjourned from its annual meeting at 3:35 pm.

Respectfully submitted,
Jerry L. Puls, MD
Chairman of the Board

Report of the SECRETARY-TREASURER

Subject: **Annual Report**
Presented by: James D. Funnell, MD
Secretary-Treasurer
Referred to: Reference Committee I

Background

The association's fiscal year is the calendar year January 1 through December 31. The financials presented are the Price Waterhouse audit for fiscal year 1988, the January 1 through March 31 Quarterly Statement, and the Proposed Budget for 1989. The Board of Trustees approved a preliminary 1989 budget at its February 5 meeting. We have already completed four months of the '89 fiscal year. Several years ago the House approved a recommendation that authorized the board to continue expenditures of the previous year's level pending approval of the new budget by the House of Delegates at its annual meeting.

In 1979 the association formed PLICO, the Physicians Liability Insurance Company, and is the company's sole shareholder. PLICO's financial performance is reflected in the association's audit and has been since 1980. Action by the board at last year's annual meeting indicated a desire to separate the accounting of OSMA from that of PLICO, but national accounting standards will not permit the absolute accounting separation of the two organizations under their current corporate structures. Reorganization options were rejected by the Board of Trustees because predominant control of PLICO by OSMA would have been relinquished.

The 1988 Audit

The balance sheet indicates assets of the association have decreased slightly from $6.1 million to $5.98 million as a result of losses in PLICO of approximately $100,000, OSMA losses of $5,800, and capital depreciation of about $116,000. OSMA has increased its 1989 dues income as a result of an increase voted in 1988 and is projecting a surplus for 1989. The depreciation, an accounting function only, is likely offset by appreciation, since the association's real estate assets are well located and in good condition. Liabilities indicate very little difference between the 1987 and 1988 figures. The deferred revenue item of $293,500 is the principal amount remaining in the "Return to Reason" campaign fund. In 1988 we transferred $73,591 to refund OSMA for financial advances made to the campaign. The original assessment in 1985 produced $474,461.01 over two years which is earmarked for tort reform.

Overall, the balance sheet shows no dramatic change from 1987 and reflects a very solvent, liquid position with few long-term liabilities and an equity for each association member of approximately $2,000.

Revenues and Expenses show a fairly significant change in revenue when compared to 1987. This resulted from an increase in allocation of dues for the JOURNAL subscriptions and a specified allocation for the annual meeting of $10, which were directives of the Board of Trustees. The JOURNAL subscription rate of $10 was raised to $20, which more accurately reflects the cost of the scientific publication; the $10 for the annual meeting was voted by the House of Delegates many years ago to avoid perceived offensive fundraising measures to finance the annual meeting. The results of these allocations are more apparent in the Quarterly Statement, which shows both the annual meeting and the JOURNAL in positive cash positions. Both the JOURNAL and annual meeting show losses for 1988 but will hopefully be in a positive position throughout 1989. The PLICO losses are again reflected in the revenue statement as is the modest loss of $45,800 for OSMA operations.

The statement of changes in fund balances simply details the reduction of cash balances of both PLICO and OSMA. The notes to the financial statements are significant but not substantially different from previous years. The elaboration on PLICO reflects the consolidation requirements of the new accounting rules.

The Schedule of Revenues details the income accounts of OSMA. Revenues decreased by about $50,000, mostly because of a decrease in interest income and the lack of OSMA Directory revenues. The directory is published every two years, and 1988 was an "off" year. Again, this allocation to JOURNAL subscriptions and to the annual meeting slightly distorts the dues income but enhances the JOURNAL and annual meeting income accounts. The move by OFPR to other quarters decreased lease income by about $8,500. Overall, income was down slightly, but the association's operations nearly broke even ($5,800 loss), even though we had budgeted for a $36,500 deficit.

Expenses were less than budgeted by about $100,000. Council expenses were less than projected primarily because the director of the Physicians Recovery Program did not assume full-time duties as anticipated. Other expenses are within the budgeted range. Insurance costs, particularly health, continue to rise dramatically. Transportation costs are increasing, and payroll and related costs are up based on salary adjustments made at the last annual meeting. No extraordinary expenses were incurred.

Proposed 1989 Budget

The budget for next year anticipates income of $1.2 million and expenditures of $1.1 million, with a Revenue over Expense excess of $90,000. It is basically an extension of the 1988 budget with no major new expenditures. The Physician Recovery Program will require additional funds since Doctor Smith is now full-time,

but that had been anticipated last year. The Council on Professional and Public Relations plans a public survey to complement the physician survey conducted last year and additional efforts will be made to encourage more participation from medical students. All in all, next year's budget guarantees the association a well-balanced program that provides services and representation for all association members.

Summary

The financial information submitted to the House of Delegates is an accurate representation of OSMA's financial condition. We are solvent, operating within the framework of a reasonable budget; we have contingency reserves, and we provide a reasonable array of services and programs to our members. We do have some capital improvement needs at our headquarters building which will be submitted to the Board of Trustees, which can be funded from our reserves without jeopardizing our financial condition.

Recommendations

1. That the Audit Report prepared by Price Waterhouse be approved.
2. That the Budget for 1989 be approved.

Respectfully submitted,
James D. Funnell, MD
Secretary-Treasurer

Price Waterhouse
Colcord Building
15 North Robinson
Oklahoma City, OK 73102

Report of Independent Accountants

April 12, 1989

To the House of Delegates of the
Oklahoma State Medical Association:

We have audited the accompanying balance sheet of Oklahoma State Medical Association (the "Association") as of December 31, 1988 and 1987, and the related statements of revenue and expenses and changes in fund balance and of cash flows for the years then ended. These financial statements are the responsibility of the Association's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We did not audit the financial statements of Physicians Liability Insurance Company ("PLICO"), a wholly-owned subsidiary accounted for on the equity method of accounting, which statements reflect total assets of $50,321,451 and $46,264,809 as of December 31, 1988 and 1987, respectively, and total revenues of $35,823,754 and $31,081,549 for the years then ended. Those statements

OKLAHOMA STATE MEDICAL ASSOCIATION
BALANCE SHEET

	December 31, 1988	December 31, 1987
Assets		
Current assets:		
Cash and cash equivalents	$ 352,131	$ 386,496
Trust investment accounts	516,823	486,323
Accounts receivable	609,362	634,159
Inventory	1,933	5,883
Prepaid expenses	10,038	9,284
Total current assets	1,490,287	1,522,145
Property and equipment:		
Land	7,808	7,808
Building	393,963	393,963
Furniture, fixtures and equipment	139,147	136,255
Equipment under capital lease	15,330	15,330
	556,248	553,356
Less—Accumulated depreciation and amortization	(115,989)	(96,621)
	440,259	456,735
Equity in unconsolidated subsidiary	4,046,717	4,146,018
Other assets:		
Loan acquisition costs, net of amortization	2,526	2,964
	$5,979,789	$6,127,862

	December 31, 1988	December 31, 1987
Liabilities and Fund Balance		
Current liabilities:		
Current portion of long-term debt	$ 9,179	$ 9,375
Accounts payable	132,203	102,754
Accrued income taxes	—	2,356
Deferred membership dues	648,630	655,345
Total current liabilities	790,012	769,830
Long-term debt	108,448	117,627
Deferred revenue—		
Assessments	293,500	346,051
Contributions	63,537	63,605
Fund balance	4,724,292	4,830,749
Commitments (Note 8)		
	$5,979,789	$6,127,862

The accompanying notes are an integral part of this statement.

OKLAHOMA STATE MEDICAL ASSOCIATION
STATEMENT OF REVENUES AND EXPENSES AND CHANGES IN FUND BALANCE

	Year ended December 31, 1988	Year ended December 31, 1987
Revenue:		
Membership dues	$ 551,165	$ 634,977
Journal	138,893	118,708
Annual meeting	48,568	19,585
Special assessments	73,591	26,549
Interest and other	140,745	217,167
	952,962	1,016,986
Expenses:		
General membership	707,512	672,776
Journal	169,395	185,476
Annual meeting	81,860	75,081
Charge-off of reinsurance receivable	—	217,500
Equity in net loss of unconsolidated subsidiary	99,301	61,551
	1,058,068	1,212,384
Excess of expenses over revenue before provision for income taxes	(105,106)	(195,398)
Provision for income taxes	1,351	2,492
Excess of expenses over revenue	(106,457)	(197,890)
Fund balance, beginning of year	4,830,749	5,028,639
Fund balance, end of year	$4,724,292	$4,830,749

The accompanying notes are an integral part of this statement.

OKLAHOMA STATE MEDICAL ASSOCIATION
NOTES TO FINANCIAL STATEMENTS

Note 1 — Summary of Significant Accounting Policies:

The following is a summary of certain significant accounting policies followed in the preparation of these financial statements for Oklahoma State Medical Association (the "Association").

Organization. The Association was formed as a not-for-profit organization that provides education and various other services to the members of the medical profession in the State of Oklahoma.

Investment in unconsolidated subsidiary. As more fully discussed in Note 2, the Association's investment in Physicians Liability Insurance Company (a wholly-owned subsidiary) is accounted for by the equity method. Under this method the Association's equity in the net earnings or losses of the subsidiary is included currently on the Association's statement of revenues and expenses. Any dividends received from the subsidiary will be reflected as a reduction of the investment.

were audited by other auditors whose report thereon has been furnished to us. As more fully discussed in Note 2, the report of the other auditors included an additional paragraph which indicated that the liability for losses and loss adjustment expenses ("reserves") recorded by PLICO at December 31, 1988 is approximately $19,000,000 lower than the amount contained in the report of PLICO's consulting actuaries. This difference is material to the financial statements of PLICO, taken as a whole. The process for setting PLICO's reserves is both complex and subjective. The ultimate liability for losses and loss adjustment expenses cannot be determined at this time. Our opinion expressed herein, insofar as it relates to the amounts included for PLICO, is based solely upon the report of other auditors.

We have conducted our audits in accordance with generally acccepted auditing standards. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits and the report of other auditors provide a reasonable basis for our opinion.

As more fully described in Note 2, the Association has accounted for its investment in PLICO under the equity method of accounting. Generally accepted accounting principles require that the investment in a wholly-owned subsidiary be accounted for under the consolidation method of accounting.

In our opinion, because of the effects of accounting for the investment in PLICO under the equity method as discussed in the fourth paragraph of this report, the financial statements referred to above do not present fairly, in conformity with generally accepted accounted principles, the financial position of Oklahoma State Medical Association as of December 31, 1988 and 1987, or the results of its operations or its cash flows for the years then ended. Based upon our audits and the report of the other auditors, the financial statements referred to above are presented fairly, in all material respects, on the equity method of accounting as described in Note 2.

Price Waterhouse

OKLAHOMA STATE MEDICAL ASSOCIATION
STATEMENT OF CASH FLOWS

	Year ended December 31,	
	1988	1987
Cash flows from operating activities:		
Net loss	$(106,457)	$ (197,890)
Adjustments to reconcile net loss to net cash provided for (used by) operating activities:		
Depreciation	19,368	19,367
Decrease in membership dues receivable	24,797	375,342
Decrease in dues from reinsurance companies	—	370,000
(Increase) decrease in inventory, prepaid and other assets	3,634	(7,121)
Increase (decrease) in accounts payable and other liabilities	27,093	(742,643)
Decrease in deferred membership dues	(6,715)	(4,340)
Decrease in deferred revenue	(52,619)	(28,302)
Loss on equity in subsidiary	99,301	61,551
Net cash provided for (used by) operating activities	8,402	(154,036)
Cash flows from investing activities:		
Additions to property and equipment	(2,893)	(16,312)
Addition to investment in subsidiary	—	(153,372)
Addition to trust investment account	(30,499)	(486,323)
Cash used in investing activities	(33,392)	(656,007)
Cash flows from financing activities:		
Reductions in notes payable	(9,375)	(8,133)
Net decrease in cash and cash equivalents	(34,365)	(818,176)
Cash and casb equivalents at the beginning of the year	386,496	1,204,672
Cash and cash equivalents at the end of the year	$ 352,131	$ 386,496

Supplemental Disclosure of Cash Flow Information

Cash paid during the year for income taxes and interest was $4,298 and $12,847, respectively.

The accompanying notes are an integral part of this statement.

Revenue Recognition. Membership dues are recognized as revenue ratably over the membership period.

Deferred revenue. The Association reserves those funds received through general assessments or voluntary contributions that are restricted as to use. These revenues are deferred and recognized as equivalent expenditures for the restricted purposes are made

Trust investment accounts. Represents funds held in trust for the restricted purposes as well as funds that may be used at the discretion of management.

Property and equipment. Property and equipment, including the capitalized leases, are recorded at cost. Depreciation is computed using the straight-line method over the assets estimated useful lives.

Loan acquisition costs. Loan acquisition costs are amortized on a straight-line basis over the life of the loan.

Income taxes. The Association was organized as a not-for-profit organization and, as such, is exempt from income taxes under Section 501(c)(6) of the Internal Revenue Code. However, the Association does pay income taxes on unrelated business income.

Cash Flow. In 1988, a Statement of Cash Flows has been presented in place of a Statement of Changes in Financial Position presented in prior years. Prior year statements have been restated to conform to the 1988 presentation. The adoption of the new statement represents a change in the manner of display of financial information only and has no impact on the financial position and results of operations in fiscal 1988 or 1987.

For purposes of the statement of cash flows, the Association considers all cash and savings accounts, and certificates of deposit with an original maturity of less than three months to be cash equivalents.

Reclassifications. Certain amounts in the 1987 financial statements have been reclassified for comparative purposes.

Note 2 — Investment in Subsidiary:

Physicians Liability Insurance Company ("PLICO") is a wholly-owned subsidiary of the Association. PLICO is engaged in the business of writing professional liability and medical insurance for qualified physicians who are members of the Association, and accident and health protection for the qualifying physicians.

The Association accounts for its investment in PLICO on the equity method of accounting. Generally accepted accounting principles require investments in wholly-owned subsidiaries be accounted for under the consolidation method of accounting. If consolidated financial statements were presented, the effect would be to increase total assets and liabilities by $46,274, 734 and $42,118,791 as of December 31, 1988 and 1987, respectively, and increase total revenue by $35,823,754 and $31,081, 549, respectively for the years then ended. As net income of the subsidiary is recorded on the equity basis, there would be no effect to fund balance or income from operations. In addition, all individual balance sheet, net income and cash flows financial statement items of PLICO would have been combined with the Association's financial statements. The subsidiary was not consolidated due to the diversity of its operations.

A substantial portion of PLICO's business relates to professional medical liability insurance. The insurance of these types of risks involves lengthy claim development periods and claims having long "tails," or periods from the date of the occurrence of an incident to the date a claim is actually settled and paid. PLICO follows a method of accounting for its liability for losses and loss adjustment expenses ("reserves") based upon the income to be earned on PLICO's fixed income investment portfolio which is maintained to cover such liability. In the opinion of PLICO's management, this method results in a more realistic statement of reserves based upon the earnings of the related investment portfolio. The carrying amount of PLICO's reserves has been reduced by $16,880,062 and $16,717,114 at December 31, 1988 and 1987, respectively, by discounting the estimated gross reserves by 8.5% and 9.3%, respectively, which represents the weighted average yield rate of PLICO's fixed income investment portfolio.

PLICO uses a firm of independent consulting actuaries to assist in setting its reserves. At December 31, 1988, the reserves recorded by PLICO were approximately $19,000,000 lower, before discounting, than the amount contained in the report of the independent consulting actuaries. This difference is material to the financial statements, taken as a whole. The principal elements of the difference relate to (1) assumptions used in determining losses related to commuted reinsurance; (2) assumptions used in estimating losses that will develop beyond nine years from the occurrence of an event; and (3) the effects of these assumptions on the requisite level of loss adjustment expenses.

The process for settling PLICO's reserves is both complex and subjective, involving consideration of a number of variable factors. PLICO's management believes that the reserves determined by the consulting actuaries are extremely conservative, that an adequate basis exists in both theory and fact for the lower amount of reserves recorded by PLICO, and that the recorded reserves will be adequate to cover the losses and loss adjustment expenses to be incurred. The consulting actuaries acknowledge that while the assumptions used by PLICO are not as conservative as those used in the actuarial report, the resulting estimate is within a range of possible outcomes which includes values as low or lower than those projected by PLICO, as well as values much higher than those contained in the actuarial report. The ultimate liability for losses and loss adjustment expenses cannot be determined at this time.

The following is a condensed balance sheet, statement of operations and statement of cash flows for PLICO:

PLICO
CONDENSED BALANCE SHEET

	December 31, 1988	December 31, 1987
Assets		
Cash and investments	$48,888,259	$44,816,940
Interest receivable	895,436	940,025
Other	537,756	507,844
	$50,321,451	$46,264,809
Liabilities and Stockholders' Equity		
Reserved for losses and loss adjustment expenses	$39,710,758	$35,519,003
Unearned premiums	3,965,278	2,549,921
Reinsurance premiums payable	1,057,059	1,018,082
Accounts payable and other	1,541,639	3,031,785
Total liabilities	46,274,734	42,118,791
Total stockholders' equity	4,046,717	4,146,018
	$50,321,451	$46,264,809

PLICO
CONDENSED STATEMENT OF OPERATIONS

	Year ended December 31, 1988	Year ended December 31, 1987
Revenue:		
Premiums earned	$31,514,632	$27,092,612
Investment income and fees	4,309,122	3,988,937
Total revenue	35,823,754	31,081,549
Expenses:		
Losses and loss adjustment	30,598,065	26,078,921
Operating expenses	5,290,649	5,064,179
Income taxes	34,341	—
	35,923,055	31,143,100
Net loss	$ (99,301)	$ (61,551)

PLICO
CONDENSED STATEMENT OF CASH FLOWS

	Year ended December 31, 1988	Year ended December 31, 1987
Cash provided by operating activities	$ 3,652,093	$ 10,112,970
Cash used in investing activities	(4,100,062)	(12,780,578)
Cash flows from financing activities	—	153,372
Net decrease in cash and cash equivalents	$ (447,969)	$ (2,514,236)

Note 3 — Accounts Payable:
The following is a summary of the accounts payable at December 31, 1988 and 1987:

	1988	1987
Trade	$ 31,316	$ 32,109
Dues	85,397	56,601
Leebron Memorial Fund	6,894	6,942
Other	8,596	7,102
	$132,203	$102,754

Note 4 — Long-Term Debt:
The following is a summary of long-term debt at December 31, 1988 and 1987:

	1988	1987
Note payable to a company; secured by real estate; payable in 180 monthly payments of $1,448 including interest at 10% and one payment of $69,548 due in 1994	$114,634	$120,234
Capitalized lease; secured by certain equipment; payable in monthly payments of $385 including interest at 19%	2,993	6,768
	117,627	127,002
Less—Current portion	(9,179)	(9,375)
	$108,448	$117,627

The scheduled maturities of the long-term debt are as follows:

1990	$ 6,834
1991	7,550
1992	8,340
1993	9,213
1994	76,511
	$108,448

Note 5 — Charge-Off of Reinsurance Receivable:
Prior to the inception of PLICO, the Association acted as an intermediary between its member physicians and certain insurance companies. The purpose of which was to obtain a source for malpractice insurance coverages in excess of the $100,000 offered by the current insurance company. In connection therewith, the Association entered into an agreement with certain insurance companies whereby premiums securing potential excess claims were placed in a trust account under the administration of the Association. In 1984, the Association reached a settlement with the insurance companies whereby certain of the funds held in trust were released to the Association.

Included in the settlement was a claim by the Association against the insurance companies totaling $370,000 representing refunds due on excess premiums paid. During 1987, claims were paid by the insurance companies which used all remaining funds held in trust. The $370,000 receivable was written-off along with a related payable due to PLICO of $152,500 resulting in the net charge-off of $217,500.

Note 6 — Retirement Plan:
The Association has a defined benefit pension plan which covers employees who are twenty-one years of age or older and have at least six months of service. The plan has a fiscal year ending May 31. The total pension expense for 1988 and 1987 was $9,928 and $7,780, respectively. The amount of accrued pension expense for the year is funded by the Association in annual contributions to the pension plan. The actuarial present value of the accumulated benefits to participants of the plan and the net assets available for those benefits as of June 1, 1988 and 1987 are as follows:

	1988	1987
Actuarial present value of the accumulated plan benefits:		
Vested	$148,010	$ 85,670
Nonvested	8,439	6,493
	$156,449	$ 92,163
Net assets available for benefits	$227,153	$228,053

The Financial Accounting Standards Board has issued Statement of Financial Accounting Standards No. 87 "Employers' Accounting for Pensions." Among other things, FAS 87 requires the use of a standardized method for measuring net periodic pension cost over the employee's service life and to recognize a liability when the accumulated benefit obligation exceeds the fair value of plan assets. The Association plans to adopt the provisions of FAS 87, in compliance with its effective date, in 1989. However, due to the complexities of the calculation that will be required to implement the Statement, the effect on the Association's financial statements is not known nor reasonably estimable at this time.

In determining the actuarial present value of the accumulated plan benefits, an assumed weighted average rate of 7-8% was used.

Note 7 — Related Party Transactions:
During 1988 and 1987, PLICO contracted with the Association to provide PLICO's customers with certain educational services and seminars. The Association received $325,000 each year for these services and incurred costs of $132,492 and $135,419 in 1988 and 1987, respectively.

Note 8 — Commitments:
The Association has various noncancelable lease agreements for automobiles. The leases are for 24 month periods expiring in 1989 and 1990. The minimum future lease commitments are as follows:

1989	$12,912
1990	6,840
	$19,752

Lease expense was $13,649 and $13,372 for the years ended December 31, 1988 and 1987, respectively.

Note 9 — Professional Liability Stabilization Program:

In 1976, the Association established the Professional Liability Stabilization Program by assessing its member physicians a 15% surcharge on their basic professional liability policies. The purpose of the program was to avoid an additional 15% increase in premiums on the member physicians professional liability policies.

This money was placed in a trust account to secure future losses on claims incurred by the insurance carrier and thus is not included in the financial statements of the Association. As of December 31, 1988, the balance on deposit was $635,096. The Association is currently negotiating with the insurance carrier as to the disposition of these funds.

OKLAHOMA STATE MEDICAL ASSOCIATION
BALANCE SHEET
MARCH 31, 1989

Current Assets	
Cash	$ 884
Savings accounts & certificatea of deposit	1,241,343
Accounts receivable	52,572
Prepaid expenses	9,175
Total Current Assets	1,303,974
Property and Equipment	
Land	7,808
Building	393,962
Furniture, fixtures and equipment	139,661
Equipment under capital lease	15,330
	556,761
Less — Accumulated depreciation	(120,739)
	436,022
Investment in Subsidiary	4,046,717
Investment in OSMA Member Service Corporation	3,000
Other Assets	
Loan acquisition costs — net of amortization	2,526
Total	$5,792,239
Current Liabilities	
Accounts payable	$ 129,481
Loan & scholarships payable	68,927
Student fund	3,158
Deferred income — Assessments	293,500
Deferred income — Dues	486,472
Total Current Liabilities	981,538
Long-Term Liabilities	
Notes payable	108,448
Fund Balance	
Unappropriated	4,702,253
Total	$5,792,239

OKLAHOMA STATE MEDICAL ASSOCIATION
SCHEDULE OF REVENUES
MARCH 31, 1989

Operations	
Dues	$139,658
Interest	24,192
Building lease	3,100
Directory sales & advertising	2,435
Computer label sales	2,466
Subtotal	171,851
Excess reimbursement over expenses from Contract with subsidiary	66,342
From Operations	238,193
Less: General Membership Expenses	269,441
	(31,248)
Journal	
Revenue	29,425
Expenses	26,709
	26,716
Annual Meeting	
Revenue	9,700
Expenses	48
	9,652
Net from Operations	$(18,880)

OKLAHOMA STATE MEDICAL ASSOCIATION
SCHEDULE OF EXPENSES
FOR THE MONTHS ENDED MARCH 31, 1989

General Membership Expenses	
Salaries	$107,898
Pension	1,475
*Councils & programs	63,144
Depreciation of leased equipment	4,750
Dues and subscriptions	1,777
Equipment rental	4,780
Insurance	11,095
Interest	1,489
Office supplies	7,004
In-state travel	279
Out-of-state travel & AMA conventions	6,476
Payroll taxes	10,865
Postage & shipping	14,202
Repairs & maintenance	1,983
Services	987
Staff & officers	10,398
Telephone & utilities	9,548
Computer	4,810
Other operating	6,481
	269,441
Less: Excess reimbursement over expense of subsidiary	66,342
Total General Membership Expenses	$203,099
Councils & Programs* (included above)	
Governmental activities	$ 6,046
State legislation	22,199
Professional & public relations	3,857
Member services	8,614
Public & mental health	210
Medical services	59
Medical staffs	504
Physician recovery program	9,127
OALA	4,419
Auxiliary	4,539
Student activities	980
Newsletter	2,590
Total Council & Program Expense	$ 63,144

Officers elected or re-elected at this year's Annual Meeting include (l to r): John R. Alexander, MD, Tulsa, OSMA president; Norman L. Dunitz, MD, Tulsa, AMA alternate delegate; Boyd O. Whitlock, MD, Tulsa, OSMA alternate trustee; Jay A. Gregory, MD, Muskogee, AMA alternate delegate; William O. Coleman, MD, Oklahoma City, AMA delegate; George H. Kamp, MD, Tulsa, AMA delegate; Perry A. Lambird, MD, Oklahoma City, OSMA president-elect; Thomas C. Alexander, MD, Okmulgee, OSMA alternate trustee; Ed. L. Calhoon, MD, Beaver, PLICO director; Sara R. DePersio, MD, Oklahoma City, AMA alternate delegate and vice-chair, OSMA Board of Trustees; Michael J. Haugh, MD, Tulsa, AMA delegate; Gary F. Strebel, MD, Oklahoma City, AMA alternate delegate; Jon C. Axton, MD, Oklahoma City, OSMA alternate trusteee; Gary W. Rahe, MD, Oklahoma City, OSMA trustee; and G.A. "Bill" Shelton, Jr., MD, Norman, OSMA alternate trustee.

OSMA PROPOSED BUDGET
1989

Revenues	
Dues	$ 650,000
Special Assessments	75,000
Interest and Commissions	100,000
Building Lease	10,000
Membership Directory	35,000
Computer Labels	7,500
Contract with Subsidiary (PLICO)	325,000
Income from Subsidiary (Member Services)	25,000
Contract with OUHSC-ODH	35,000
Total Revenue from Operations	$1,262,500
Expenses	
*General Administration	$ 888,500
*Council Expenses	284,000
Total Expenses	$1,172,500
Net Excess Revenue over Expense	$ 90,000

*See schedules

OSMA PROPOSED BUDGET
1989

General Expense	
Salaries	$ 395,000
Awards	3,000
Data Processing	20,000
Depreciation and Amortization	19,000
Dues and Subscriptions	6,000
Equipment Rental and Expense	20,000
In-State Travel	1,500
Insurance	60,000
Interest	13,000
Legal and Professional	5,000
Loss Prevention	50,000
Membership Directory	15,000
Office Supplies	25,000
AMA Convention Expense	75,000
Payroll Taxes	35,000
Pension Costs	10,000
Postage and Shipping	40,000
Repairs and Maintenance	15,000
Services	3,500
Staff and Officers	30,000
Telephone and Utilities	45,000
Other General Expense	2,500
Total General Expense	$ 888,500
Council and Program Expense	
State Legislation	$ 65,000
Governmental Activities	27,500
Medical Education	500
Medical Services	1,500
Member Services	1,500
Planning and Development	3,000
Professional and Public Relations	45,000
Public and Mental Health	1,000
Hospital Medical Staff	1,000
Resident Activities	1,000
Student Activities	11,000
Young Physician	6,000
Auxiliary Activities	8,000
Physician Recovery Program	107,000
AMA Delegates Expense	5,000
Total Council and Program Expense	$ 284,000

OKLAHOMA STATE
MEDICAL ASSOCIATION
MEMBERSHIP REPORT
April 21, 1989

Regular Membership	3,153
Affiliate Members	9
Life Members	449
Junior (Residents & Students)	573
Hardship Members	1
	4,185
Pending Members	99
	4,284

There are 771 non-members listed on the OSMA physician file.

Report of the APPROPRIATION AND AUDITING COMMITTEE

Subject: **Annual Report**
Presented by: OSMA Executive Committee
Referred to: Reference Committee I

The Executive Committee of OSMA convened as the Appropriation and Audit Committee specified by the Association's by-laws, reviewed in detail the 1988 Annual Audit prepared by Price Waterhouse. The Committee reports to the House of Delegates that the report accurately reflects the financial condition of the Association, and that the accounts of the Association are in order.

Report of the COUNCIL ON PLANNING AND DEVELOPMENT

Subject: **Annual Report**
Presented by: M. Joe Crosthwait, MD, Chairman
Referred to: Reference Committee I

Introduction

The Council on Planning and Development is charged with the responsibility of studying and recommending long-range objectives for the OSMA and assessing and making recommendations regarding the resources and programs necessary to reach the objectives. Council membership consists of all of the OSMA's general officers, the delegates and alternate delegates to the AMA, and the chairmen of all other association councils and committees. This puts it in the position of having access to the best possible information for long-range objective study.

In an effort to reduce expenses associated with holding two Council meetings each year, the Council, once again, decided to meet only once during 1989. The meeting took place on April 15-16 and was held in Oklahoma City, Oklahoma.

Council Goals and Recommendations

The Councils were charged with reporting their long-range goals for the next 5-10 years. The Council on Planning and Development heard excellent reports and has made recommendations to be considered by the OSMA House of Delegates during its 1989 Annual Meeting.

(1) Council on Public and Mental Health: Following lengthy discussion on the subject of Mandated Employee Health Insurance, the Council on Planning and Development recommends the following and asks concurrence by the OSMA House.

Recommendations: The Council on Planning and Development believes that individuals should have an avenue to participate in a health insurance program; however, this participation should be through the employer's establishment of risk pools rather than Mandated Employee Health Insurance. Therefore, the Council on Planning and Development urges the Oklahoma State Medical Association to *NOT* support Mandated Employee Health Insurance.

(2) Council on Professional and Public Relations: The Council discussed in great detail the need to increase the professional relations aspect of this Council, as well as the strengthening of the public relations or media branch. The Council believes that the basis for many of medicine's problems with federal government intrusion and professional liability are due to a poor public image of medicine and that an aggressive public awareness program would develop allies in the public sector which would alleviate many of these problems.

Recommendations: The Council on Planning and Development recommends the following:

(1) Continue to develop aggressive public awareness programs designed to position the physician as the patient advocate.

(2) Establish physician-media spokesmen, to be available to the press as needed. These media spokesmen should be selected geographically.

(3) Increase physician involvement in Association activities through the professional relations aspect of the Council.

(4) Position statements should be drafted in legislative and policy areas for spokesmen's use with the media.

(3) Hospital Medical Staff Section: The OSMA-HMSS, as are other state-sections, experiencing difficulty in obtaining large numbers of participation. The Council on Planning and Development discussed the possibility of dissolving the Section and creating a Council in its place. Following discussion this Council recommends the following:

Recommendations:

(1) The OSMA should, through the appropriate device, encourage each Oklahoma Hospital Medical Staff to send a representative to both the OSMA and AMA HMSS Meetings.

(2) The OSMA Hospital Medical Staff Section should not be dissolved, but rather it should continue in its quest for greater participation through an upgraded contact program. It was agreed that the OSMA-HMSS is a viable entity and should be continued.

(4) Council on Medical Education: The Council on Planning and Development recognizes the need for CME throughout Oklahoma and recommends the following:

Recommendations:

(1) The Council should urge physicians to obtain their Physician Recognition Awards through the American Medical Association.

(2) The Council should continue to produce Medical Education offerings in various locations throughout Oklahoma.

(5) Child Abuse Task Force: The Council reviewed the success of this Task Force and the excellent work of OSMA President Ray McIntyre, MD. Although final passage of the Child Abuse legislation has yet to occur, the Council recommends the following:

Recommendations:

(1) The Council urges the continuation of the Task Force's efforts, in con-

junction with the Council on State Legislation, to obtain passage of the Child Abuse Legislation.

(6) Council on State Legislation: The Council was given an update regarding the legislative activities of this Council. It was noted that as the Council must keep track of Oklahoma Regulations, as well as legislation, the Council recommends the following:

Recommendations:

(1) The Council on State Legislation's name should be changed to reflect its responsibilities more accurately. Therefore, this Council recommends that the Council be renamed the "Council on State Legislation and Regulation."

(7) Council on Governmental Activities: The Council was given a review of the OSMA's federal legislative program. It was noted that there are many Oklahoma physicians, in various specialties, who are serving in national specialty officer capacity. It was further noted that it might be a good plan to identify these various group leaders and invite them to work with the OSMA in an effort to strengthen medicine's influence. Following additional discussion, the Council recommends the following:

Recommendations:

(1) The OSMA should identify Oklahoma physician leaders in the various specialities to join forces with the OSMA in our quest to convey medicine's positions to Congress on various health issues.

(8) Council on Member Services: The Council heard a detailed report of the numerous activities of the Council on Member Services and commended the Council members' hard work. Following discussion, the Council on Planning and Development recommends the following:

Recommendations:

(1) The Council believes that the services provided by the Council should continue with the ongoing emphasis being to provide OSMA members direct benefits and services.

(9) Council on Medical Services: The Council on Planning and Development reviewed the activities of the Council on Medical Services. The Council continues to provide the association and its members with an excellent avenue to adjudicate complaints and grievances, as well as serving as liaison between the Board of Medical Licensure and Supervision and PLICO's Loss Prevention Committee.

Recommendations:

(1) Following discussion, it is this Council's recommendation that the Council on Medicine Services continue in its activities. This Council believes that the OSMA membership is fortunate to have an entity able to expedite grievances in a professional manner.

(10) AMA Delegate Elections: The Council discussed the new election format adopted at the last House of Delegates. It was decided that the OSMA President would appoint another Ad Hoc Committee during 1989-1990 to review the new format and recommend additional changes as needed.

Conclusion

It has been my pleasure to serve as Chairman of the Council on Planning and Development and to have had the opportunity to address the goals of the association with each capable Council Chairman.

Respectfully submitted,
M. Joe Crosthwait, MD,
Chairman
Ray V. McIntyre, MD
John R. Alexander, MD
Perry A. Lambird, MD
James D. Funnell, MD
Larry L. Long, MD
Robert G. Perryman, MD
Jerry L. Puls, MD
Sara R. DePersio, MD
William G. Bernhardt, MD
Ronald S. Barlow, MD
Irwin H. Brown, MD
Warren V. Filley, MD
Robert M. Mahaffey, MD
Floyd F. Miller, MD
Ed L. Calhoon, MD
Victor L. Robards, Jr., MD
Orange M. Welborn, MD
J. B. Eskridge III, MD
William O. Coleman, MD
Gary F. Strebel, MD
John A. McIntyre, MD
James B. Pitts, Jr., MD
Michael J. Haugh, MD
George H. Kamp, MD
Robert W. Baker, III, OSMA Staff

Report of the PHYSICIANS LIABILITY INSURANCE COMPANY

Subject: **Annual Report**
Presented by: C. Alton Brown, MD, Chairman and President
Referred to: Reference Committee I

Letter from the President

Dear Member of the Oklahoma State Medical Association and PLICO Insured:

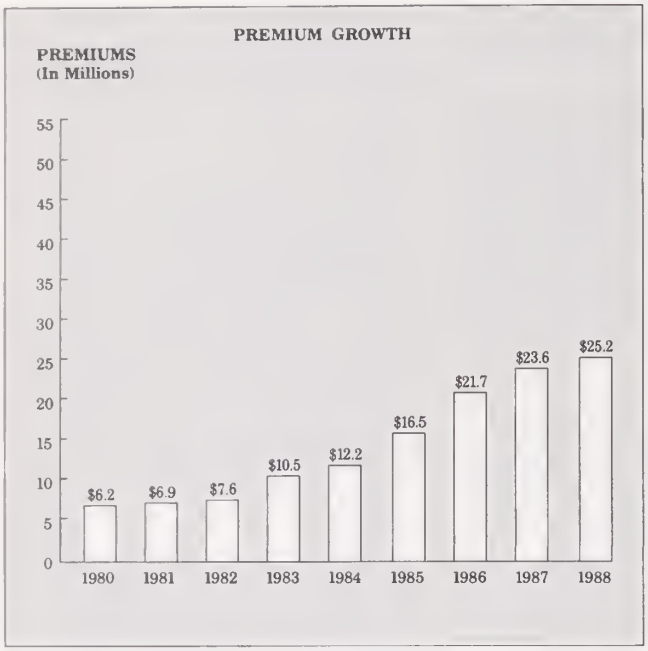
It has always been an honor for me to address my colleagues on behalf of your PLICO Board through the PLICO annual report. It is the OSMA's unity and strength as a group that has made PLICO a success. PLICO has continued to serve the objectives we physicians set for it. The primary goals are to make sure that insurance costs us no more than the real losses plus expense and that the company remains financially strong. PLICO continues to accomplish these objectives.

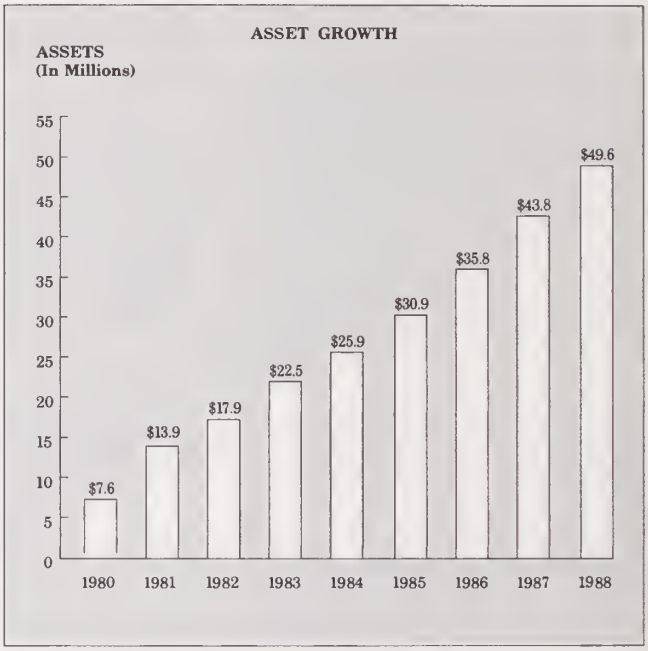
This year the medical profession was subjected to a devasting series of legislative and judicial actions. For almost a decade we had made steady, although slow, progress toward Tort Reform. Some minor relief of the legal burden that every physician bears as an inevitable component of his practice had been achieved. This year, the most important aspects of the Tort Reform we had fought so long and so hard for were reversed, and significant liberalizations took place in the law that made us as individual practitioners even more vulnerable to lawsuits.

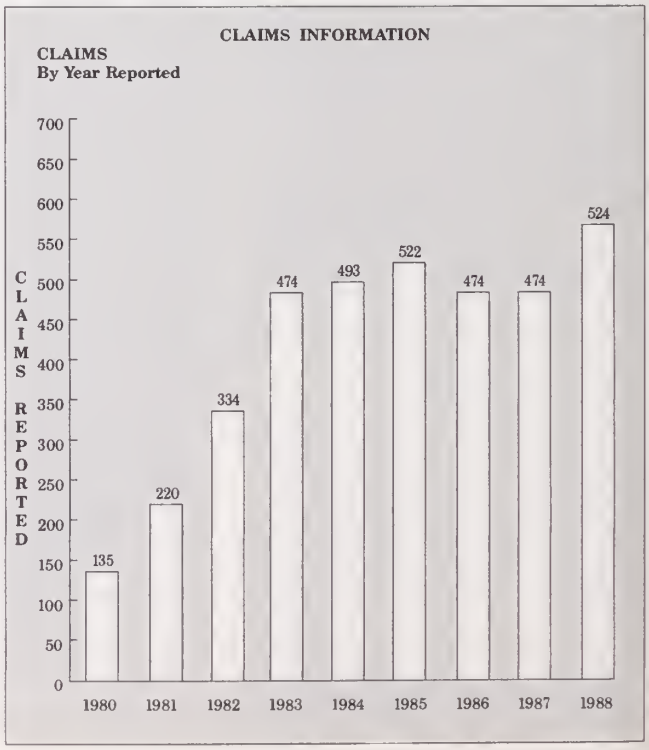
The impact on the professional liability insurance environment was stunning. Had we been relying on a commerical insurer we would most surely have lost our insurance entirely or been subjected to rate increases like those that have occurred in New York, Florida, California, and Texas. Because we owned our own insurance company, we were able to address the need for additional reserves with coolness and moderation, thus ameliorating the impact of the legal and judicial changes.

Most important, we were able to retain the occurrence insurance policy that PLICO is pledged to write. The PLICO policy continues to contain broad coverage that encompasses vir-

tually every activity associated with the practice of our profession. Should the addition to reserves made this year prove ultimately unnecessary, the money still belongs to all of us and can be used to reduce future premium cost or avert future premium increase. However, let me hasten to say that the only way we can accomplish reductions in future professional liability premiums, or even avert future increases, will be through Tort Reform. The prospects of accomplishing efficacious Tort Reform have been dealt a severe blow by the changes that occurred last year, but we must not abate our efforts. These legal changes have reemphasized the essential nature of occurrence insurance. The most significant change in the law involves an indefinite extension of the Statute of Limitations which makes the claims-made insurance policy, which is limited to coverage of claims in the year







in which the policy is in force, virtually worthless in Oklahoma. This law may induce the entry of some claims-made insurers and risk retention pools on the theory that their risk is lower. As claims-made insurers, they expect losses to take longer to appear. They can run if their loss experience begins to go bad and leave the doctors they insured without coverage. Be careful of solicitations by these insurers; none provide occurrence insurance. Some are not legitimate insurance companies, and despite orders to desist from the Insurance Department, are still soliciting business in our state.

Loss Prevention

Because of the changes in the law, your Company has taken as many internal steps as possible to share losses with the insurers of ancillary health care professions. For example, your Loss Prevention Committee adopted an endorsement to the policy that requires you to secure a certificate of insurance from a CRNA if you use one. In the past we have had millions of dollars worth of losses involving CRNA's who were often uninsured. They were unable to make a contribution to the claim, therefore, PLICO and the physician bore the entire cost. By securing certificates of insurance from CRNA's, it is possible to distribute the loss and ameliorate the impact on your premium.

This year was the first full year of a placenta retention and examination program which was started statewide in an effort to provide a defense for claims originating from bad babies. Already this program has proven useful by demonstrating that forces beyond the control of the physician were responsible for injury to the fetus. It is important to continue this line of defense so that the premiums for obstetricians and gynecologists do not continue to escalate at such an alarming rate.

Attendance of Loss Prevention Seminars was made mandatory effective January 1, 1986. An insured physician must attend a seminar every three years. PLICO's loss experience indicates that attendance of these seminars has had an impact on our loss experience. It is evident that these seminars are valuable to all of us.

Talking with a colleague is C. Alton Brown, MD, Oklahoma City, chairman and president of the Physicians Liability Insurance Company (PLICO).

Underwriting

The PLICO Underwriting Committee continues with its task of underwriting individual physicians. In 1988, 23 physicians were reviewed during the annual underwriting review. In addition to physicians already insured, the Underwriting Committee reviews applications for professional liability insurance by physicians entering the state and corroborates the statements of the applicant regarding the following areas: loss history, restriction of privileges, loss of license to practice, loss of license to prescribe and dispense narcotics, and conviction of crime.

The Underwriting Committee is exerting its best efforts to keep those physicians who are doing their best to practice good medicine from paying for a handful of bad eggs, and it is doing its best to prevent physicians who have had serious problems in other states from fleeing to Oklahoma in the belief that they can secure malpractice insurance here.

In an effort to guarantee fairness and equity, the right of appeal remains for any insured physician who has had an underwriting action taken against him. No doctor is ever cancelled nor is his coverage altered without an opportunity to exercise this right.

Claims

As of December 31, 1988, a total of 3,650 professional liability claims had been reported since PLICO's formation on January 1, 1980. Of these, 1,053 were open. A total of 684 claims have been paid for $65.3 million. More than 52% of the claims reported, 1,913, were closed with no payment. This demonstrates the large number of frivolous claims and lawsuits being filed against Oklahoma physicians. Unfortunately, these frivolous claims cost money to investigate and to defend.

During 1988, 524 claims were reported. A claim or suit is filed against 1 out of every 7 physicians insured by PLICO each year. The PLICO Claims Committee, composed entirely of physicians who are PLICO Board members, review every case set for trial and either grant settlement authority on cases determined to have a settlement value or designate that the claim be tried. Your Claims Committee reviews all newly reported claims, and reviews the attorneys who are retained by PLICO approving them and their qualifications.

Investments

The PLICO Investment Committee's policy, requires investing the vast majority of PLICO's reserves, capital and surplus in government bonds or high quality commercial bonds that are "A" rated or better.

The Investment Committee has earned over $24,000,000 on its investments since January 1, 1980. The investment income for 1988 was $4,097,000, which is an 8.3% annual rate of return. The interest income was used for the expense of running the company, paying losses, and defending claims. Thus, PLICO insureds still pay less than one dollar for a dollar's worth of protection.

PLICO Health

PLICO Health continued to see an increase of enrollment during 1988. As of December 31, 1988, the enrollment had increased by 650 individuals over the same period in 1987. There are 2,759 PLICO Health policies in force for physicians, and 4,656 policies in force for their employees which repre-

PHYSICIANS LIABILITY INSURANCE COMPANY
BALANCE SHEET
Year Ended December 31, 1988

Assets	
Cash and Invested Assets	$48,227,765
Premium and Agent Balances in Course of Collection	231,191
Interest Receivable	895,436
Note Receivable — OFPR	123,084
Receivable from Broker	154,687
TOTAL ASSETS	$49,632,163
Liabilities	
Unearned Premium	$ 5,800,039
Losses and Loss Adjustment Expenses	39,710,759
Miscellaneous Accounts Payable	40,306
TOTAL LIABILITIES	$45,551,104
Capital	
Common Stock	$ 150,000
Additional Paid-In Capital	5,753,372
Retained Loss	(1,822,313)
TOTAL CAPITAL	$ 4,081,059
TOTAL LIABILITIES AND CAPITAL	$49,632,163

STATEMENT OF INCOME
Year Ended December 31, 1988

Premiums	
Direct Premium Written	$38,047,494
Net Premium Written	$31,711,282
Premiums Earned	$31,711,282
Expenses	
Losses	$23,988,473
Loss Adjustment Expenses	6,609,591
Other Underwriting Expenses	5,290,648
TOTAL UNDERWRITING EXPENSES	$35,888,712
Underwriting Loss	$(4,177,430)
Investment Income	4,112,471
Net Loss	$ (64,959)
CAPITAL December 31, 1987	4,146,018
Surplus Contributions — 1988	(64,959)
CAPITAL December 31, 1988	$ 4,081,059

sents over 18,000 individual insureds. The benefits paid on behalf of policyholders during 1988 total $11,790,915. The benefits paid since inception total $58,867,915.

It was necessary to institute a rate increase of 5% on June 1, 1988 and another increase of 10% on December 1, 1988. The Board made the decisions on the rate increase reluctantly. The rate increases instituted by PLICO are considerably less than the 30% to 40% rate increases by our commercial competitors and reflect annual losses paid by the company, as do all of PLICO's premiums. No competition offers guaranteed continued coverage as PLICO does. This priceless benefit means as long as you don't cancel your policy you will have coverage. You *will not* be cancelled no matter what your loss experience.

Tort Reform

As we have said before, Tort Reform is the only long-term solution to controlling professional liability insurance costs. Again this year the OSMA is going head-to-head with the trial lawyers in an attempt to get legislation passed to ease the burden for Oklahoma physicians. This battle will only be won when the State Legislature realizes the importance of Tort Reform on the ever increasing premiums that affect the availability and cost of medical care in Oklahoma. Only we physicians can made them aware of this.

Talk to your legislators and try to convince them that the health of all Oklahomans, including their own families, depends on the actions that they can take in this regard.

Respectfully submitted,
C. Alton Brown, MD,
Chairman and President

Report of the OKLAHOMA STATE MEDICAL ASSOCIATION AUXILIARY

Subject: **Annual Report**
Presented by: Mrs. Jan Storms, President
Referred to: Reference Committee I

"Physician Partnerships, Today's Reality . . . Tomorrow's Challenge" has been the Auxiliary theme for 1988-89. In the ever changing medical environment, it is essential that physicians of the OSMA and their Auxiliary work together. Only through unification will we have the strength to have an impact on today's reality!

OSMA Auxiliary Fall Confluence held at the Waterford Hotel in October was designed with community participation in mind. In order to help us deal with new challenges, the focus was health projects that can be used in our own communities. Some of the topics discussed were "Teenagers and AIDS," "Teenage Pregnancy — Yesterday's Challenge . . . Today's Reality," "Working with Partners," and "Planning a Teenage Health Symposium." Several County Auxiliaries presented the HOW TO workshops. Velma Seif, AMAA Health Projects Chairman, gave us ideas and help on conducting successful projects.

AMA-ERF has had a very successful year. Christmas Sharing Cards, memorial donations, raffles, auctions, luncheons, Christmas card sales, and other small fundraisers have continued to fund future medical research and education. A silent auction will be held this year at our annual meeting. At this date, over $28,000 has been sent to AMA-ERF.

Legislative activity is a reality in which we as your Auxiliary Partners must be involved. Our challenge is to educate our Auxiliaries and their physician partners on how to become involved. "Medicine Day at the State Capitol" accomplished this goal. Jerry Schenken, MD, shared his insights on running for election, and how we can have an impact on legislation with 250 of us. Sherry Strebel, her committee, and the OSMA staff educated us to face tomorrow's challenge in a marvelous way.

OMPAC membership is a direct way to be involved in the legislative process. One hundred thirty Auxiliary members belong to OMPAC/AMPAC. Your Auxiliary appreciates the opportunity to serve as voting members on three OSMA groups: OMPAC/AMPAC, the Council on State Legislation, and the Council on Governmental Activities.

The Health Education Foundation is now a year old. The steering committee granted a $500 Ann Garrison Scholarship to an outstanding nursing student in Oklahoma and a $500 grant to a county for a community health project. Your Auxiliary is pleased to offer this financial reward to the state.

Membership is an important reality for the State Auxiliary. We have to grow in numbers to increase our strength as an organization. We have gained in membership this year by 40 members, and we are very excited about it. The County visits by the president and the president-elect have become traditional because of their importance. Meeting and visiting with auxilians from the counties enables everyone to share concerns and goals.

It is a wonderful way to form strong bonds between the County and State.

The AMA Auxiliary Leadership Confluence that is held twice a year provides education and information for potential Auxiliary leaders. Strong leadership is a must in creating member participation in the Auxiliary. The auxilians who are invited to attend always benefit by gaining leadership skills and ideas.

The support and encouragement of Dr. Ray McIntyre, your president, the Board of Trustees, and the OSMA staff are very much appreciated by your Auxiliary. Thank you for the opportunity of working together. Your Auxiliary has faced today's reality with their Physician Partners and is excited about tomorrow's challenge!

Respectfully submitted,
Jan Storms, President
OSMA Auxiliary

Report of the OKLAHOMANS AGAINST LAWSUIT ABUSE COALITION

Subject: **Annual Report**
Presented by: Lyle Kelsey, OALA Executive Director
Referred to: Reference Committee I

Introduction

Oklahomans Against Lawsuit Abuse is a coalition of business and professional groups that have combined their efforts to seek some kind of positive reform in the civil liability statutes for the State of Oklahoma. Since its inception in October of 1985, true and meaningful tort reform has been slow and painful with a lawyer-dominated legislature. During the year 1987, the Select Committee on Insurance Rates and Tort Claims created by the Oklahoma Legislature through enactment of Senate Bill 488, conducted 16 public hearings around the state discussing the cost and availability of liability insurance in relationship to lawsuits and the threat of lawsuits. During the 1988 legislative session, all of this information was compiled and issued in a report prepared by E. James Stergiou, Risk Consultants, Inc. The report summarized the information from the public hearings and also analyzed annual statements from each insurance carrier writing liability business in the State of Oklahoma.

Thirty-one companies responded to survey and all of the data indicated that nationwide, insurance carriers lost money. Based on underwriting, the companies collectively lost $0.29 for every premium dollar earned and if earnings from investment income were included, they lost $0.17. In Oklahoma, company figures indicated a loss of $0.24 per premium dollar earned and $0.11 if offset by investment income. Mr. Stergiou, in conclusion, indicated "In Oklahoma, premiums must be sufficient to cover losses . . . since premiums seem to be at already high levels the solution seems to be in controlling losses. The report contains a list of possible tort reform issues such as structured settlements, collateral source rule, modification of joint and several liability doctrine, sovereign immunity for professional boards, and statute of limitations (or repose) for product and professional liability. Mr. Stergiou "estimates there may be a 20-25% reduction in losses if all of the items in the report are enacted."

New OSMA President John R. Alexander, MD, his wife, Marjorie, and grandson Bobby enjoy the show at the Inaugural Dinner.

The Oklahoma State Legislature upon receiving this report, was told by trial attorneys that the report *proved nothing* and consequently the legislature ignored the report. (Copy of the Stergiou report is available upon request.)

In June of 1988, the Oklahoma Supreme Court dealt a significant blow to medical liability in Oklahoma by ruling a portion of the statute of limitations (third year actual damages) unconstitutional as special class legislation for physicians. This one ruling has caused PLICO to actuarially increase its loss reserves by $21 million or $7 million over the next three years. Remember, the Oklahoma State Legislature does not believe there is any correlation between tort reform and insurance premiums!

Due to this ruling and other questions of constitutionality of various tort reform proposals, OALA Coalition commissioned a research study through the Oklahoma City University Law School to help in establishing a basis for legislative priorities. The research started with the premise of answering three questions. 1) Is it possible to write legislation for a special class of tortfeasors? 2) If not, then what steps can be taken legislatively, or, by changing the state constitution, that would give relief to health care providers in the area of professional liability? 3) What about the state constitution on matters of caps on noneconomic damages, joint and several liability, the collateral source rule, etc? (Copy of the Arrow Report is available upon request.) Basically, the report indicates that it is not possible under the Oklahoma Constitution to write special legislation for any class of tortfeasor. The research also indicates that some of the best possibilities to make changes in tort law that would be less susceptible to the challenge of unconstitutionality would be restrictions on joint and several, periodic payments, and statute of limitations providing it allows for all tortfeasors, specifically water (pollution), land (damage), infectious diseases (negligent exposure), and medical liability (malpractice).

The American Trial Lawyers Association during the year 1988, was successful in encouraging 21 state attorneys general to file a lawsuit against four major liability insurance companies claiming collusion in creating a false liability insurance crisis in order to increase premiums. That lawsuit is still in the courts. However, it has hurt the tort reform effort by

weakening the arguments about the correlation between tort reform issues and liability insurance premiums.

Review of Activities

The Coalition introduced four legislative bills. The following is a description of the bill number, author, subject, and committee assignment.

SB 423

Author: Senator Paul Taliaferro, Democrat, Lawton
Subject: Abolishment of Joint & Several Rule and Periodic Payments
Committee Assignment: Senate Judiciary

Abolishment of Joint & Several Rule: This would remove the deep-pocket theory from those cases involving multiple defendants whereby a defendant with a small percentage of negligence can be held liable for the full award.

Periodic Payments: This would allow any defendant whose portion of a judgment exceeds $100,000 to elect to pay the excess portion of the judgment in monthly payments.

SB 409

Author: Ralph Choate, Republican, Kingfisher
Subject: Affidavit of Malpractice
Committee Assignment: Senate Judiciary

Affidavit of Malpractice: This bill would require the plaintiff attorney to seek confirmation of malpractice against *any* professional (accountant, architect, physician, etc.) prior to filing the lawsuit.

HB 1562

Author: Representative Larry Rice, Democrat, Pryor
Subject: Product Liability — Contributory Negligence
Committee Assignment: House Judiciary

Contributory Negligence: This bill has to do with product liability where the plaintiff is found to be responsible for a portion of the negligence resulting in injury and cannot recover damages for that portion of their contributory negligence.

HB 1577

Author: Representative Joe Heaton, Republican, OKC
Subject: Product Liability — State of the Art
Committee Assignment: House Judiciary

State of the Art: This bill also affects product liability where a product involved in a lawsuit is held liable only for compliance with federal and state safety regulations applicable at the time the product was manufactured.

Conclusion

Neither the House or the Senate were willing to hear any of these bills this session. The chairmen of both the Senate Judiciary and House Judiciary committees are opposed to hearing any tort reform and consequently, would not schedule the bills on the committee agenda. As you look at the committee membership, you are encouraged to contact the legislators and ask them to appeal to the committee chairman to allow these bills to be heard during the next legislative session. Tort reform is going to be a long-term issue and will only be successful when the pro-reform legislators band together to confront the leadership of both Houses about the need to discuss tort reform issues.

As a result of the 1988 elections, a number of pro-business, pro-tort reform legislators were elected that would be willing to lead this type of a charge as soon as they become more familiar with the legislative process. Even though there were some beneficial changes by the elections, the leadership still has a significant persuasion against tort reform.

There is some evidence nationally that the U.S. Supreme Court is studying the constitutionality of multi-million dollar punitive damage awards and that a decision may come down favoring some kind of limitation on punitive damages. There is also discussion in Oklahoma about rewriting the Oklahoma Constitution which if it were accomplished could open some avenues for enhancing the tort reform effort. The Coalition will continue to push for legislative resolve to the inequities within the civil liability system and bring about fairness in the courtroom.

OKLAHOMANS AGAINST LAWSUIT ABUSE

Financial Statement
Nov. 1985 - Dec. 1988

Income		
Initial Assessment (1985-1986)	$491,994	
Interest earned (7/87-12/88)	24,829	
OSMA Tort Reform Assessment balance (12/88)		$516,823
Contributions from other sources (1986-1988)		105,900
Total		$622,723
Expenses		
Administrative	$141,699	
Advertising	106,055	
Office	63,809	
Legal		17,660
Total Expenses		329,223
Balance		$293,500

Senate Judiciary SB 409 & SB 423 524-0126

Vicki Miles-LaGrange, Chairman, Oklahoma City, attorney
Jerry Smith, Vice Chairman, Tulsa, attorney
Ben Brown, Oklahoma City, business
Bernest Cain, Oklahoma City, attorney
Larry Dickerson, Poteau, attorney
Howard Hendrick, Bethany, attorney
Lewis Long, Tulsa, business
Billy Mickie, Durant, attorney
Jerry Pierce, Bartlesville, attorney
Don Rubottom, Tulsa, attorney
Bernice Shedrick, Stillwater, attorney
Trish Weedn, Purcell, business
James Dick Wilkerson, Atwood, business
Gerald Ged Wright, Tulsa, attorney

House Judiciary HB 1562 & HB 1577 521-2711

Dwayne Steidley, Chairman, Claremore, attorney
Frank Davis, Vice Chairman, Guthrie, attorney
Gary Bastin, Del City, business
Loyd Benson, Frederick, attorney
Gene Combs, Collinsville, attorney
Howard Cotner, Altus, business
Guy Davis, Calera, business
Bill Graves, Oklahoma City, attorney
James Hamilton, Heavener, attorney
Joe Heaton, Oklahoma City, attorney
Michael Hunter, Oklahoma City, attorney
Ernest Istook, Oklahoma City, attorney
Jessie Pilgrim, Cushing, attorney
Jeff Potts, Muskogee, business
Gary Stottlemyre, Tulsa, business
Ray Vaughn, Edmond, attorney

Respectfully submitted,
Lyle Kelsey
Executive Director

Reference Committee II

REPORTS TO THE HOUSE OF DELEGATES

M. Boyd Shook, MD, Oklahoma City, delivers the report of Reference Committee II.

Report of REFERENCE COMMITTEE II

Presented by: M. Boyd Shook, MD, Chairman

Mr. Speaker and Members of the House of Delegates:

Reference Committee II gave careful consideration to the several items referred to it and submits the following report:

(1) Report of the President

Recommendation:

Mr. Speaker, your Reference Committee recommends that the Report of the President be filed for information.

Your Reference Committee expresses its appreciation to Doctor McIntyre for his dedication to the profession and for excellent direction this past year.

The Reference Committee is aware of Doctor McIntyre's dedication to establishing a Child Abuse Task Force and we commend him for his efforts in dealing with this most tragic dilemma in our society.

(2) Report of the President-Elect

Recommendation:

Mr. Speaker, your Reference Committee recommends that the Report of the President-Elect be filed for information.

The Members of the Reference Committee wish to express its best wishes to Doctor John Alexander for a successful year and especially in his efforts to build a more cohesive and cooperative state medical association.

(3) Report of the Council on Professional and Public Relations

Recommendation:

Mr. Speaker, your Reference Committee recommends that the Report of the Council on Professional and Public Relations be adopted.

The Reference Committee would like to commend Doctor Warren Filley for his first successful year with this Council.

(4) Report of the Council on Public and Mental Health

Recommendation:

Mr. Speaker, your Reference Committee recommends that the Report of the Council on Public and Mental Health be adopted with special instructions that the portion of the Report that deals with the prenatal care record (page 2, lines 11-28 and page 3, lines 8 and 9) be referred to the Council on Public and Mental Health for further study with specific input from the American College of Obstetricians and Gynecologists, Oklahoma Section; the state OB/GYN societies; and PLICO; and that the prenatal care form not be printed in the OSMA JOURNAL until further study is completed.

Mr. Speaker, during discussion of the Report of the Council on Public and Mental Health, testimony was heard concerning the need for physicians to be involved in public assistance and education to the Oklahoma school systems with reference to drug and alcohol abuse.

Your Reference Committee recommends that the OSMA establish a Task Force to study these issues and develop a mechanism to deal with drug and alcohol education in the school systems.

(5) Report of the Council on Medical Education

Recommendation:

Mr. Speaker, your Reference Committee recommends that the Report of the Council on Medical Education be adopted.

The Reference Committee appreciates the continued leadership of Doctor Irwin Brown and the involvement of all the members of this Council.

(6) Report of the Council on Medical Services

Recommendation:

Mr. Speaker, your Reference Com-

mittee recommends that the Report of the Council on Medical Services be adopted.

It is evident that Doctor Barlow and this Committee are very active in trying to offer a service to the public by reviewing complaints and grievances.

(7) Report of the Young Physicians Section

Recommendation:

Mr. Speaker, your Reference Committee recommends that the Report of the Young Physicians Section be adopted.

Your Reference Committee would like to commend Doctor Philip Mosca for his endeavors in encouraging young physicians in being involved in the OSMA, as our young physicians are the future of medicine.

(8) Report of the Medical Students Section

Recommendation:

Mr. Speaker, your Reference Committee recommends that the Report of the Medical Students Section be adopted.

Your Reference Committee recognizes the need for this kind of activity in encouraging young medical students to become involved in organized medicine.

(9) Report of the Hospital Medical Staff Section

Recommendation:

Mr. Speaker, your Reference Committee recommends that the Report of the Hospital Medical Staff Section be adopted.

Your Reference Committee appreciates Doctor William Coleman's hard work with this Section and we support his efforts to develop a white paper on the Health Care Quality Improvement Act and we encourage Doctor Coleman in his efforts to increase membership and representation to the OSMA and AMA.

(10) Report of the Oklahoma Foundation for Peer Review

Recommendation:

Mr. Speaker, your Reference Committee considered the Report of the Oklahoma Foundation for Peer Review and recommends that the Report be filed.

(11) Report of the OSMA AIDS Ad Hoc Committee

Recommendation:

Mr. Speaker, your Reference Committee recommends that the Report of the OSMA AIDS Ad Hoc Committee be filed.

Mr. Speaker, this Reference Committee heard considerable discussion concerning rules and regulations for laboratory tests for HIV.

Your Reference Committee recommends that these rules and regulations be referred to the Board of Trustees for further study and appropriate response to the Oklahoma State Health Department.

(12) Report of the OSMA Child Abuse Task Force

Recommendation:

Mr. Speaker, your Reference Committee recommends that the Report of the OSMA Child Abuse Task Force be filed.

Reference Committee II commends Doctor Ray McIntyre for his efforts in trying to curb a growing problem. We encourage his continued involvement in this effort.

(13) Report of the JOURNAL of the Oklahoma State Medical Association

Recommendation:

Mr. Speaker, your Reference Committee recommends that the Report of the JOURNAL of the Oklahoma State Medical Association be filed.

Ray V. McIntyre, MD (r), retiring OSMA president and new editor-in-chief of the JOURNAL, presents the Charlotte S. Leebon Memorial Trust Award to Thomas D. Tinker, MD, Oklahoma City. Seated behind them are David Bickham, OSMA executive director; John R. Alexander, MD, OSMA president-elect; and Larry L. Long, MD, speaker of the OSMA House of Delegates. Dr Tinker and coauthor Teresa M. Stacy, MD, were given the award for having written the best scientific paper published in the JOURNAL in 1988. Their paper, "Ten Caveats in the Early Management of Acute Epiglottitis in Children," appeared in the August issue.

Your Reference Committee would like to take this opportunity to commend Doctor Mark R. Johnson for his dedication to excellence of the OSMA JOURNAL for the past twenty plus years.

The Reference Committee wholeheartedly supports the resolution of commendation relating to Doctor Johnson's service.

The Reference Committee also looks forward to many years of continued excellence under the guidance of Doctor Ray McIntyre.

(14) Resolution 1 — Equal Physician Reimbursement

Recommendation:

Mr. Speaker, your Reference Committee recommends that Resolution 1 be adopted.

The Reference Committee reaffirms its support of single-state reimbursement.

(15) Resolution 4 — Mental Health Director

Recommendation:

Mr. Speaker, your Reference Committee recommends that Resolution 4 be adopted.

(16) Resolution 6 — Alzheimer's Disease Recommendations

Recommendation:

Mr. Speaker, your Reference Committee commends the Oklahoma Governor's Task Force for its efforts on Alzheimer's disease and related disorders.

The Committee recommends that Resolution 6 not be adopted and the Recommendations developed by the Governor's Task Force on Alzheimer's Disease and Related Disorders be referred back to the Council on Public and Mental Health for detailed study.

The Reference Committee heard discussion regarding the operation of community diagnostic centers, development of diagnostic protocols, and the financial obligations that such a system would entail. Because of these concerns, your Reference Committee recommends that the Governor's Report be examined more closely.

(17) Resolution 7 — Health Departments in Oklahoma

Recommendation:

Your Reference Committee agrees with the overall intent of Resolution 7 as well as the Report of the Ad Hoc Committee on Public Health and Private Practice and recommends that the Report and Resolution 7 be combined in a Substitute Resolution. Therefore, Mr. Speaker, we recommend that Resolution 7 not be adopted.

Your Reference Committee recommends the following Substitute Resolution:

Resolved, That the physicians of the Oklahoma State Medical Association and representatives of the state and local health departments work together to encourage regular communication at the local level between community physicians and health department officials. The problem areas have been identified as follows:

1) Availability of services,
2) Continuity of care,
3) Attitudes of patients, physicians, and employees,
4) Monetary concerns,
5) Differing standards of care.

Mr. Speaker, your Reference Committee recommends that the Substiute Resolution be adopted.

(18) Resolution 8 — Regional Indigent Care Authorities

Recommendation:

Mr. Speaker, we recommend that Resolution 8 not be adopted.

Your Reference Committee heard discussion concerning the first and third *Resolves* of Resolution 8. Because of the controversy of additional taxation and misinterpretation of available versus mandatory health insurance, the Committee felt that Resolution 8 should not be adopted.

(19) Resolution 9 — Education on Indigent Care Issues

Recommendation:

Mr. Speaker, your Reference Committee recommends that Resolution 9 not be adopted.

Mr. Speaker, the Reference Committee considered various aspects of this resolution and felt that Oklahoma physicians are aware of the problem of medically uninsured individuals and that physicians are trying to meet the needs of these patients. The Committee felt that OSMA and practicing physicians are trying to make concerted efforts to remedy these problems, such as the VIP program and other donated community services.

(20) Resolution 10 — Retired Physicians and Indigent Care

Recommendation:

Mr. Speaker, your Reference Committee recommends Resolution 10 be amended as follows:

On line 8 between "retired" and "members," insert "and active" and that the second *Resolved* be deleted.

The Committee listened to comments concerning professional liability insurance and decided that there were too many legal questions to make a final determination.

Mr. Speaker, this Reference Committee recommends that Resolution 10 be adopted as amended.

(21) Resolution 11 — Commendation to Doctor Hulsey/Environmental Projects

Recommendation:

Mr. Speaker, this Reference Committee recommends that Resolution 11 be adopted.

Your Reference Committee extends its congratulations to Doctor George Hulsey for his selection in serving in this national capacity.

(22) Resolution 12 — Indigent Projects

Recommendation:

Mr. Speaker, your Reference Committee recommends that Resolution 12 be amended as follows:

On the second *Resolve,* line 23, a semi-colon and "Be it further" be inserted after the word "uninsured"; and on the third *Resolve,* line 27 between the word "identify" and "entities" insert the word "reputable."

Mr. Speaker, your Reference Committee recommends that Resolution 12 be adopted as amended.

(23) Resolution 15 — Physician Support of the Nursing Profession

Recommendation:

Mr. Speaker, we recommend that Resolution 15 be amended as follows:

Page 2, line 2, after the word "by" and before the word "nurses" insert "continuing to include" and delete the word "including."

Mr. Speaker, we recommend that Resolution 15 be adopted as amended.

(24) Late Resolution 22 — BNDD Inspections

Recommendation:

Mr. Speaker, your Reference Committee recommends that Resolution 22 not be adopted in lieu of the following Substitute Resolution:

Resolved, That the physicians of Oklahoma request that investigations be done in a manner that does not interdict the proper medical use of controlled drugs in the compassionate treatment of terminal illnesses and painful disabilities; and be it further

Resolved, That the OSMA educate the membership to the BNDD laws and regulations concerning handling, storage, and recordkeeping of narcotics and the educational programs available through the BNDD.

Mr. Speaker, your Reference Com-

mittee recommends adoption of the Substitute Resolution.

Mr. Speaker, your Reference Committee recommends adoption of the Report of Reference Committee II, as amended, as a whole.

Mr. Speaker, this concludes the Report of Reference Committee II. Your Reference Committee wishes to thank all who participated in the hearing and contributed to the preparation of this report.

Respectfully submitted,
M. Boyd Shook, MD, Chairman, Oklahoma City
Charles Harmon, MD, Tulsa
Francis Hollingsworth, MD, El Reno
H. Douglas Proctor, MD, Atoka
Michael E. Reif, MD, Oklahoma City
Gary Strebel, MD, Oklahoma City
Boyd Whitlock, MD, Tulsa
Lyle Kelsey, Staff
Susan Meeks, Staff

Report of the COUNCIL ON PROFESSIONAL AND PUBLIC RELATIONS

Subject: **Annual Report**
Presented by: Warren V. Filley, MD, Chairman
Referred to: Reference Committee II

Introduction

The Council on Professional and Public Relations is responsible for internal and external communications of the Oklahoma State Medical Association including maintaining understanding among patients and physicians and keeping members informed about programs and policies of the Association.

Review of Activities

This year the Council completed the first scientifically conducted survey of OSMA members.* Kenneth D. Bailey, PhD, conducted the poll. The survey found that federal government involvement in medicine was the primary concern of Oklahoma physicians. The cost of malpractice insurance was a very close second as a major concern, followed by the threat of mandatory assignment and the cost of medical care.

The survey found that a simple majority of state physicians — 51 percent — believe the number of physicians in their community is about right. However, 42 percent think there are too many doctors in their town.

In regard to physician advertising, 69 percent were opposed except for listings in the yellow pages, professional directories and invited talks and speeches. Eighty percent said advertising will lower the professional status of physicians.

Sixty-five percent of Oklahoma physicians are dissatisfied with the Medicare program and 73 percent of the respondees are dissatisfied with Medicaid. However, 25 percent said they are participating Medicare physicians and another 55 percent said they took assignment on a case-by-case basis.

In terms of representing physicians, specialty societies — 51 percent — and the OSMA — 45 percent — received the highest marks.

The survey will be used by the Council to plan future activities.

The Council recommends that the public be surveyed this year to determine their attitude toward physicians and the issues that affect medicine now and in the future. Such a survey could benefit not only this Council but others, particularly the councils dealing with state and federal legislation.

This year, in cooperation with the Oklahoma Health Care Project and the Department of Human Services, the OSMA spearheaded an effort that included the Oklahoma Hospital Association, Oklahoma Osteopathic Association, Oklahoma Nurses Association, Oklahoma Pharmaceutical Association, and Oklahoma Dental Association to encourage Oklahomans to use the line on their tax form to earmark a donation to indigent health care. Over ten thousand posters were distributed and the OSMA received a letter of commendation from the DHS.

In addition, the Council continues to support the VIP program, an effort to identify Medicare patients for whom physicians will accept assignment. While a majority of Oklahoma physicians are aware of and are part of the program, the Council will not be satisfied until the program functions all over the state.

The Council recommends that, rather than visiting each medical society in the state to make a presentation about the VIP program, the OSMA mail information to all physicians, remind those who are participating in the program and encourage those who are not to enroll.

OSMA staff continues to work closely with state and local representatives of the Areawide Agencies on Aging to further spread the VIP program. The interaction has been mutually beneficial. The VIP program remains a high priority for the Council.

The Council continues to publish the OSMA *News,* contribute to the JOURNAL of the OSMA and interface with the media.

The Council continued its monthly "Viewpoint" series on KTOK radio and hopes to expand these to other stations. In the year ahead the Council plans to distribute to state newspapers a column of medical information on a regular basis. Oklahomans would be asked to send questions they would like answered to the OSMA.

The Council worked with the OSMA Council on Member Services to produce a membership brochure this year and next year plans to produce and publish guidelines for physicians and the public regarding medical advertising.

Objectives

1) Continue to publish OSMA *News*
2) Produce Medical Updates as needed
3) Support VIP program
4) Continue KTOK Viewpoint commentaries
5) Institute monthly OSMA column to be distributed to state newspapers
6) Distribute radio commentaries to state radio stations
7) Produce radio and television public service announcements as needed
8) Conduct survey of public attitudes toward medicine.

Budget: $45,000.00

Respectfully submitted,
Warren V. Filley, MD, Chairman
Howard A. Bennett, MD
Burdge F. Green, MD
Tim L. Grode, MD
James C. King III, MD
Gary L. Massad, MD

Mary Anne McCaffree, MD
L. Sam Musallam, MD
John W. Phillips, MD
Lee E. Schoeffler, MD
Michael R. Talley, MD
M. Michael Sulzycki, Staff

*Copies of the survey are available upon request from the OSMA.

Report of the COUNCIL ON PUBLIC AND MENTAL HEALTH

Subject: **Annual Report**
Presented by: Robert M. Mahaffey, MD, Chairman
Referred to: Reference Committee II

Introduction

It is the goal of the Council on Public and Mental Health to provide the citizens of the state, as well as OSMA members, with timely information regarding the medical aspects of public health and oversee needed programs in these areas.

Review of Activities

This Council, as always, remains one of the OSMA's most active.

The main issues addressed by the Council this year were indigent care, prenatal care, and the relationship between community physicians and state and local health departments.

As evidenced by the resolutions submitted by the Council to the OSMA House of Delegates, the Council encourages the OSMA to become proactive on the issue of indigent care. Specifically, the Council urges that all physicians continue to see indigent and uninsured patients both in their offices and by donating time in indigent care clinics.

The Council also recommends that an effort be made to organize retired physicians to volunteer several hours a week to offer their medical services to indigents and uninsureds. The Council fully realizes the liability facing retired physicians and asks the OSMA to explore legislative or other means to provide insurance coverage or obtain immunity for retired physicians when they volunteer to treat indigent and uninsured patients.

The Council recognizes that the majority of uninsured citizens are actually employed but not covered by health insurance. Therefore, the Council recommends the OSMA work with the Insurance Commissioner, the insurance industry, and employers to explore mechanisms to ensure all employees access to some form of health insurance coverage.

Sara R. DePersio, MD, Oklahoma City, stops for a chat between meetings. Dr DePersio is vice-chair of the OSMA Board of Trustees and a new alternate delegate to the AMA.

In addition, the Council recommends to the OSMA and encourages the OSMA Auxiliary to establish as a project the identification of indigent and other charity care clinics in the state. Local county medical societies then should work to open communication with these clinics in order to assess their needs and assist them in treating the poor and uninsured. The existence of local indigent and charity facilities should be reported to the OSMA in order to establish a statewide clearing house of this information.

The Council's Perinatal Task Force also was very active this year. Attached to this report is a draft of a "uniform prenatal care record." A Perinatal Task Force Committee has worked very hard on this project for nearly two years. Upon completion, the form will be presented to PLICO in the hopes that it will be used by all physicians who deliver babies in an effort to improve prenatal care, obtain scientific data, and reduce losses due to obstetrics related lawsuits.

The form attached to this report is a draft. The form also will be reprinted in the July issue of the JOURNAL of the Oklahoma State Medical Association. Delegates and Alternate Delegates are asked to distribute and discuss this form with their colleagues. The subcommittee which produced this form solicits comments and constructive criticism. Send those comments by September 15, to: Mary Anne McCaffree, MD, PO Box 26307, OKC, OK 73126.

This year the Council formed an Ad Hoc Committee on Private Practice and Public Health to examine the relationship between state and county health departments and community physicians. The members of the Committee are pleased to report a productive dialogue between community physicians and representatives of public health agencies. The Committee recommends closer and more regular communication between local physicians and county health departments. The Committee encourages the OSMA to continue to work with appropriate agencies to increase communication and solve problems of referrals, funding, and eligibility. The Ad Hoc Committee on Private Practice and Public Health Report is attached to this Council report.

The Council asks OSMA Delegates and Alternate Delegates to present and discuss this report at their county medical society meetings.

The Council's Ad Hoc Committee on AIDS remained active this year. The Ad Hoc Committee members have supplied AIDS Updates for the JOURNAL of the Oklahoma State Medical Association and have sponsored an AIDS education program in Norman. Another AIDS seminar is scheduled for Lawton this spring. The Ad Hoc Committee on AIDS report is attached to this Council report.

Objectives

1) Interface with Oklahoma State Department of and Mental Health; the

OU College of Public Health; the OU College of Medicine; and the Physician Manpower Training Commission.

2) Continue to support the Perinatal Task Force in its effort to develop a uniform prenatal record.

3) Continue to support the Ad Hoc Committee on AIDS.

4) Continue to support the Maternal Mortality Committee.

5) Continue to work to develop initiatives to alleviate the problem of access to medical care for indigent and uninsured patients.

Budget Request:	
Council Expenses	$ 500.00
Subcommittee (AIDS, Perinatal, Maternal-Mortality) Expenses:	500.00
TOTAL	$1,000.00

Respectfully submitted,
Robert M. Mahaffey, MD, Chairman
Jodie L. Edge, MD
Edgar M. Cleaver, MD
Gordon H. Deckert, MD
Sara R. DePersio, MD
Hayden H. Donahue, MD
George B. Gathers, MD
William M. Harsha, MD
Jerry R. Hordinsky, MD
Greg Istre, MD
Joe B. Jarman, Jr., MD
Bertha M. Levy, MD
John S. Muchmore, MD
Mukesh T. Parekh, MD
George W. Prothro, MD
Ralph W. Richter, MD
Hal B. Vorse, MD
Larry G. Willis, MD
M. Michael Sulzycki, Staff

Addenum to the Report of the Council on Public and Mental Health

Reference Committee II amended this report, and the House concurred, that the report be adopted with special instructions that the portion of the report that deals with the prenatal care record be referred to the council for further study, with specific input from the American College of Obstetricians and Gynecologists, Oklahoma Section; the state OB/Gyn societies; and PLICO; and that the prenatal care form not be printed in the OSMA JOURNAL until further study is completed.

Further, the reference committee recommended, and the House concurred, that the OSMA establish a task force to study and develop a mechanism to deal with drug and alcohol education in the school systems.

Report of the AD HOC COMMITTEE ON PUBLIC HEALTH AND PRIVATE PRACTICE

Subject: **Annual Report**
Referred to: Reference Committee II

The OSMA Council on Public and Mental Health charged the subcommittee with studying and recommending ways to improve the relationships between county health departments and community physicians in private practice. The committee consisted of physicians in private practice and those working in public health. All the physicians on the panel were united in their desire to better health care for all in their communities. The meetings were harmonious and productive. The committee members agreed to continue to meet as needed to achieve its goals. The concerns of the committee members could be grouped into five major areas for the various programs currently offered:

1) Availability of services,
2) Continuity of care and coverage of complications,
3) Attitudes of patients, physicians, and employees,
4) Monetary concerns,
5) Differing standards of care.

Availability of Services

In an ideal society, availability of health care would be universal. The quality of the care would be uniformly high regardless of the patient's resources. But in Oklahoma in 1989, the community health needs must be served by a patchwork of public programs, private charity, subsidized and donated services, and emergency intervention. Even if capital resources were available to underwrite private care, there would be a need for public programs for immunizations, prenatal services, family planning, and public health programs.

It is imperative that we work together effectively to make the best use of limited resources. Coordination and communication are necessary at the interface of public and private programs.

Continuity of Care

One troublesome aspect of the current system is the episodic nature of the services. Patients may be seen for immunizations, cancer screening, family planning or prenatal care during specified hours. When a complication occurs later, they turn to a community physician or emergency facility with little information available from their recent medical history.

Health department personnel, on the other hand, may refer a patient for evaluation and never learn of the outcome. The patient may return to the health department clinic without a record of the evaluation or be lost to follow-up through lack of coordinated communication.

Attitudes

While most health professionals in both communities are cooperative, sufficient numbers of misunderstandings occur to hamper effective patient care.

Fiscal Concerns

Physicians as a group generally are willing to provide services for a limited number of indigent patients at a reduced cost or as charity. They become less cooperative when they feel they are being asked to carry more than their fair share of the load — not only in patient numbers, but also in reimbursement procedures. If they feel that patients are being distributed unfairly, they will be less likely to cooperate. If they sense favoritism or bias in patient referral (either in low numbers or high numbers), they become concerned.

If amounts of reimbursement do not reflect the increasing costs of delivering care, they will be reluctant to participate. And if that payment is delayed for months or complicated by repeated necessity for multiple filings of the paperwork, they will be even less likely to be eager to render care. Many physicians in the state have come to the point at which they would rather provide service for nothing (or for whatever the patient may be able to pay over a long period of time) than to undergo the repeated frustration of

the submission of forms for reimbursement.

The private physician also is concerned when patients able to pay for care are seen by the health department providers. Other patients may fragment care by using both resources for various purposes. While charges at the health department are scaled according to the ability to pay, physicians are concerned about the sense of competition for the paying patient. A charge without a reasonable effort to collect constitutes merely a number on a piece of paper rather than an incentive to allocate public resources to those who need them most.

Differing Standards

This is a relatively minor point. Seldom a week passes without hearing a patient remark that she or her child was "anemic" or "low on iron" by the test at the health department. This arises from the standards used to qualify for the WIC program and/or a lack of understandable communication with the patient. She does not understand or is not fully informed that a hemoglobin or hematocrit low enough to qualify for nutritional assistance may be within normal limits for general medical purposes. The misunderstanding emphasizes repeatedly to both physicians and patients the "difference" between the systems.

Suggested Recommendations

1) Health departments in each county should identify the particular needs and resources available. Referral sources should be identified and every effort made to equalize referrals among those facilities and physicians willing to participate. Protocols, pathways, and limits should be agreed to. Supervision of the process might be entrusted to the regional director of the health department.

2) Provide mechanisms for continuity of care, coverage of complications, and follow-up.

3) Improve reimbursement and eligibility procedures from organizations providing such funding. Simplify the determination of eligibility and speed up that process so that financial arrangements may be made appropriately. Simplify the reimbursement process and speed it up to encourage participation by physicians and institutions.

4) Make a concerted effort to price services appropriately, scale those prices according to the ability to pay, and identify the resources of the clients. This would encourage appropriate utilization and conserve capital resources. There should be a realistic effort to collect for billed services.

5) Define standards and improve communicaton. The patients should be told their hematocrit "is low enough to qualify for WIC" rather than they are anemic unless that value is low enough to require intervention beyond nutritional support.

6) Work constantly to improve communication among all parties involved. By clearly defining the interdependent roles, outlining protocols and referral pathways, and providing for clear exchange of information and continuity of care, the communication process should be enhanced.

Respectfully submitted,
J. Daniel Baxter, MD
Sara DePersio, MD
Greg Istre, MD
Thomas Stough, MD
Robert Wright, MD
M. Michael Sulzycki, Staff

In the receiving line at the Inaugural evening reception are (l to r) Marjorie Alexander; her husband, John R. Alexander, MD, 1989-90 OSMA president; Edward N. Brandt, Jr., MD, new dean of the University of Oklahoma College of Medicine; and Dr Brandt's wife, Pat.

Report of the OSMA AIDS AD HOC COMMITTEE

Subject: **Annual Report**
Presented by: Ronald Gilcher, MD
Referred to: Reference Committee II

Introduction

The AIDS Ad Hoc Committee meets quarterly. The charge of the Committee is to make AIDS policy recommendations and to educate physicians on AIDS.

Review of Activities

The Committee last met on January 19, 1989. Assignments were made for AIDS update articles to appear monthly in the OSMA JOURNAL.

We discussed the spring AIDS Conference to be held in Lawton. This is the second AIDS Conference OSMA has hosted. The first conference was held in Norman and 50 physicians attended. We plan to continue the small conferences in different regions of the state.

Many of our educational efforts are done in conjunction with OK-CARE/OUHSC, including the AIDS conferences. A description of the functions of OK-CARE is attached.

The State Health Department has finalized rules and regulations for laboratory tests for HIV infection. A copy of the rules and regulations is in the left pocket of your handbook.

Respectfully submitted,
Ronald O. Gilcher, MD, Chairman
Jeffrey A. Beal, MD
Jay P. Cannon, MD
Donald L. Cooper, MD
Jodie L. Edge, MD
James D. Funnell, MD
Gregory Istre, MD
Jennifer Johnson, MD
Lloyd A. Owens, MD
Philip J. Rettig, MD

Eric L. Westerman, MD
J. Michael Pontious, MD
Perry Lambird, MD
Claudia Kamas, OSMA Staff

OKLAHOMA CENTER FOR AIDS RESOURCES AND EDUCATION

The Oklahoma Center for AIDS Resources and Education (OK-CARE) was established to help meet the educational and training needs of health care professionals responding to the multifaceted challenges posed by the epidemic of HIV infection and AIDS. OK-CARE is a resource and information clearingbouse for health care providers. It is funded through the AIDS Regional Education and Training Center, University of Texas, Houston, School of Public Health. It is co-sponsored by the University of Oklahoma Health Sciences Center and the State Department of Mental Health.

OK-CARE was developed by the University of Oklaboma Health Sciences Center and representatives of the Oklahoma State Departments of Health, Human Services, and Mental Health; the Oklahoma Dental Association, Oklahoma Nurses Association and the Oklahoma State Medical Association; the Oklahoma Medical Center; and the Oklahoma State University College of Osteopathic Medicine/Area Health Education Centers. These representatives serve on the Advisory Board to OK-CARE, which meets monthly. Involvement of other agencies is solicted through the Advisory Council, which meets semiannually. Members provide input to the Advisory Board on education and training needs, serve on committees, assist in developing and delivering programs and otherwise generate ideas for activities of the Center.

OK-CARE is staffed by: Jennifer Johnson, M.D. (Program Director); Mary Enterline, R.N. (Administrative Director); and Lori Oorjitham (Staff Assistant). Five OUHSC faculty members serve as Consultants: Nancy K. Hall, Pb.D.; Ronald S. Krug, Ph.D.; Philip J. Rettig, M.D.; Leonard N. Slater, M.D.; and Stephen K. Young, D.D.S.

OK-CARE is located in Room 418 of the OUHSC library, 1000 Stanton L. Young Boulevard, Oklahoma City (mailing address: Library Room 418, P.O. Box 26901, Oklaboma City, OK 73190). Telephone number is 405-271-6544. Clinicians who wish immediate consultation regarding patient management may call the Houston Education and Training Center Hotline at 800-548-4659.

Report of the OSMA CHILD ABUSE TASK FORCE

Subject: **Annual Report**
Presented by: Ray V. McIntyre, MD
Referred to: Reference Committee II

Introduction

The Oklahoma State Medical Association Child Abuse Task Force is made up of physicians, psychologists, case workers, child advocates, district attorneys, and judges! — all the disciplines involved in child abuse investigations. We are also honored to have four legislators serve on the Task Force.

Review of Activities

The Task Force was brought together as a sounding board for the idea which eventually became SB 73, authored by Senator Ben Brown of the Senate and Representative Linda Larason of the House.

The impetus for this piece of legislation is aptly described on the attached "President's Page" from the February 1989, Oklahoma State Medical Association JOURNAL.

The legislation has received widespread support; however, there are many decisions yet to be made, such as under which agency the Chief Child Examiner's office would be placed.

Conclusion

The Task Force and staff of the OSMA will continue to work on the language of the bill throughout the interim and will be prepared to proceed with the bill at the beginning of the legislative session.

Respectfully submitted,
Ray V. McIntyre, MD, Chairman
Ann Beam, DHS
Robert Block, MD
Barbara Bonner, PhD, OUHSC
Senator Ben Brown
Judge Sidney D. Brown
Eva Carter, Institute for Child Advocacy
Ms. Kyle Dahlem, OEA
Senator Kay Dudley
John Foley, Asst. District Attorney, OKC
Terri Gallmeier, PhD, OUHSC
Thomas W. Gruber, District Attorney, Alva
Senator Maxine Horner
Fred B. Jordan, MD
Thomas Kemper, OK Commission On Children and Youth
William R. Kennedy, DO
Representative Linda Larason
Ms. Chloe Shi Odom, Lt. Governor's Office
Sherry Plemmons, Committee on Child Abuse, State Health Dept.
Christian Ramsey, Jr., MD
Jane Schwartz, MD, OUHSC
Honorable Deborah Shallcross
Teresa Stacy, MD, OUHSC
Diana Stell, DHS
John Stuemky, MD
Steven Suttle, District Attorney, Altus
Julie Wherry, Juvenile Justice Center, OKC
Bob Jones, OK Osteopathic Assn.
Claudia Kamas, OSMA

PRESIDENT'S PAGE

Child abuse is an age-old problem that has lately become more disturbing as we better understand the resultant emotional havoc.

The true frequency of this malignant violence is hidden by a veil of fear, indifference, and shame. It may be becoming more frequent, and it was officially blamed for 31 children's deaths in Oklahoma in 1987.

Many thousands of cases of alleged child abuse are reported annually in Oklahoma, and abuse is a major cause of childhood emotional and physical injury. Many incidents are complicated by vindictive custody disputes, itinerancy, and transgenerational transmission.

The inciting event of an episode of child abuse may come from a variety of human stresses, impulsiveness, alcohol or drug abuse, or misdirected anger. Regardless of the trigger, child abuse is an expression of mental or emotional illness in the caretaker that is now rarely being addressed. Most cases initially seem to be outside the criminal justice system. Many are "solved" by temporary custody changes that leave the disturbed caretaker unchanged and unrestrained.

In Oklahoma, the physician's role in child abuse currently is to establish medically that child abuse has, in fact, taken place. These facts are then used by the caseworker or tbe district attorney in the management of the child abuse episode. Unfortunately, only a small part of the many cases are seen by physicians who are experienced in a forensic examination for child abuse, and the quality of the evidence elicited may suffer. Also, the follow-up supervision of the disturbed caretaker is presently erratic, and treatment is rarely effected.

A positive approach to the present problem in Oklahoma requires new directions from the medical profession, the legal profession, and the social workers.

We propose that Oklahoma recruit a corps of trained forensic child abuse examiners to cover the entire state through a State Child Abuse Examiner law similar to our present State Medical Examiner system for unexplained deaths. We sbould develop the legislation to establish, fund, and maintain a child abuse examiner system. The statutes should provide for appointment and training, and protect the official examiner from civil liabilities and subpoenas. The mandate should provide for necessary follow-ups, administrative support, and adequate compensation for the examiner.

With a corps of expert forensic examiners protected from familial and legal harassment, the improved medical evidence available to the social worker and the district attorney will provide a valid basis for forced treatment of the disturbed caretaker and for the custody changes necessary to protect the threatened child.

If the age-old cycle of child abuse is to be broken, we must provide the next generation of Oklahoma children a chance to mature without abuse. The help and cooperation of judges, district attorneys, social workers, and psychiatrists will be needed, but an expert and coordinated corps of official child abuse examiners could open the door to a new era in the abatement of child abuse.

When the corps of physician examiners provides prompt and scientific evidence that child abuse has occurred, the legal system will be fortified in the use of their police power to temporarily protect the child and institute a supervised treatment experience for the caretaker that would prevent future injury to the child and siblings. A state central agency to collate data, ensure follow-up, and trace the itinerant cases would prevent many deaths.

The parents of future generations need a secure, abuse-free childhood. We physicians can help.

Ray V. McIntyre, MD

Report of the COUNCIL ON MEDICAL EDUCATION

Subject: **Annual Report**
Presented by: Irwin H. Brown, MD, Chairman
Referred to: Reference Committee II

Introduction

The Council shall study and make recommendations related to all matters of maintaining or improving the level of medical competency of physicians in Oklahoma, including but not limited to, maintaining liaison with other health professions or occupations to conducting continuing medical education programs in Oklahoma. It will also monitor continuing medical education standards as they may be required by Association policy. Financial aid to education shall also be among the duties of the Council.

The activities of the Council shall be governed by the Association's Annual Program of Activities as determined by the Board of Trustees.

Review of Activities

An important activity of this Council is the surveying of institutions and organizations to provide Category I Continuing Medical Education. The Council continues its activities which meet those requirements as set forth by the national accrediting group, ACCME, the Accreditation Council on Continuing Medical Education.

Presently, the following institutions are accredited to produce Category I Continuing Medical Education offerings:

Baptist Medical Center, Oklahoma City
Duncan Regional Hospital, Duncan
Hillcrest Medical Center, Tulsa
Mercy Health Center, Oklahoma City
Presbyterian Hospital, Oklahoma City
South Community Hospital, Oklahoma City
St. Anthony Hospital, Oklahoma City
St. Francis Hospital, Tulsa
St. John Medical Center, Tulsa
Stillwater Medical Center, Stillwater

Additionally, requests for applications to obtain CME accreditation have been received from the following:

Deaconess Hospital, Oklahoma City
Edmond Memorial Hospital, Edmond
Jane Phillips Medical Ctr., Bartlesville
Choctaw Nation Indian Hospital, Talihina

OSMA Nursing Statement

For the past several years, this Council has tried to develop statements regarding the nursing profession in Oklahoma. It is the intent of this Council to continue its deliberations with the Oklahoma Nurses Association to arrive at a position supported by the OSMA, as well as the ONA.

Delegate Paul M. Kramer, MD, Okarche, takes a break.

The OSMA has met with the ONA in an effort to create a resolution that may be adopted, in total or partially, by both the OSMA and ONA House of Delegates. The resolution has been submitted to the 1989 OSMA House of Delegates for its action.

It is the position of this Council to continue in open discussion with the nursing profession and it will continue to do so in the months ahead.

Seminar Cosponsorship

The Oklahoma Bar Association has once again asked the OSMA to jointly sponsor two seminars on "Medical Testing" and "Medical Terminology." The OSMA involvement would consist of selecting the physician faculty for these events.

Following a survey of the Council, a majority recommends that the OSMA continue to cosponsor these seminars with the suggestions that a future seminar be held in Tulsa, Oklahoma.

Budget Request: $500.00

Respectfully submitted,
Irwin H. Brown, MD, Chairman
John R. Alexander, MD
Robert T. Buchanan, MD
Kenneth C. Cummings, MD
Ward R. Hardin, MD
Robert W. King, Jr., MD
Thomas N. Lynn, Jr., MD
Richard E. McDowell, MD
Harris J. Moreland, MD
B. Shushan Sharma, MD
Tim K. Smalley, MD
Edward J. Tomsovic, MD
Robert W. Baker, III, Staff

Report of the COUNCIL ON MEDICAL SERVICES

Subject: **Annual Report**
Presented by: Ronald S. Barlow, MD, Chairman
Referred to: Reference Committee II

Introduction

The council has provided to the public and in some cases third party carriers, the availability to review and adjudicate certain types of complaints and grievances involving, but not limited to, fee disputes and questions on quality of care. The council is also available to the Board of Trustees and the House of Delegates to handle any special projects that it may desire to assign.

Review of Activities

The primary activity of the council has been reviewing and adjudicating various types of grievances between physicians and patients or physicians and third party carriers. The council continues developing and refining protocol to handle these grievances in an expeditious and professional manner. The council has strengthened the relationship with the Board of Medical

Licensure and Supervision and PLICO Loss Prevention Committee by inviting their representatives to the meetings.

Council Statistics (1988-1989)

From January 1988, to April 15, 1989, forty-eight (48) cases have been reviewed by the council.

Cases adjudicated & closed	32
Cases pending for further information and/or review	16
TOTAL	48

During this same period of time, twenty-two (22) phone calls were handled which never evolved into formal complaints.

At this time, one case is pending in the Medical Ethics and Competency Committee.

Respectfully submitted,
Ronald S. Barlow, MD, Chairman
Ray V. McIntyre, MD
John A. Blaschke, MD
Hal M. Chandler, MD
John R. Christiansen, MD
Donald L. Cooper, MD
Kurt Frantz, MD
Jay Gregory, MD
James Hutton, MD
Bartis Kent, MD
Robert Outlaw, MD
John R. Perkins, MD
Ed E. Rice, MD
David Shepherd, Jr., MD
Lyle Kelsey, Staff

Report of the YOUNG PHYSICIANS SECTION

Subject: **Annual Report**
Presented by: Philip Mosca, MD, Chairman
Referred to: Reference Committee II

Introduction

Recognizing the importance and involvement of young physicians in organized medicine, the American Medical Association, in June of 1986, created the AMA Young Physicians Section. Similarly, in May of 1987, the Oklahoma State Medical Association amended its Bylaws to create the OSMA Young Physicians Section.

Review of Activities

The OSMA Young Physicians Section continues to pursue greater involvement from its under-40-years-of-age members. Presently, the OSMA Young Physicians Section is represented very well in the OSMA House of Delegates with Ward M. Hardin, MD, serving as Delegate and Robert M. Gold, MD, serving as the Alternate Delegate.

Edward J. Tomsovic, MD, dean of the University of Oklahoma Tulsa Medical College, holds the floor in the House of Delegates.

In the American Medical Association House of Delegates, Oklahoma's representation is equally strong with Philip Mosca, MD, and John Forrest, MD, serving as Delegate and Alternate Delegate respectively.

Conclusions

The OSMA Young Physicians Section intends to increase its membership and thereby bring the views and interests of young physicians before the OSMA and AMA. Thanks largely in part to the OSMA's continued Unified State Status, the Young Physicians Section in Oklahoma will once again be recognized as a national leader in membership recruitment and retainment.

On behalf of the YPS Section, may I convey to the OSMA our sincere appreciation for its support.

Budget Request: $3,000.00

Respectfully submitted,
Philip Mosca, MD, Chairman

Report of the OSMA MEDICAL STUDENT SECTION

Subject: **Annual Report**
Presented by: Mike Sulzycki
Referred to: Reference Committee II

Introduction

The OSMA Medical Student Section consists of approximately 250 medical student members from the OU Health Sciences Center, OU Tulsa Medical College and ORU School of Medicine. The purpose of the Section is to introduce students to organized medicine and the issues that affect the practice of medicine.

Review of Activities

The Section sponsors a welcoming picnic for freshmen medical students at the conclusion of their orientation to medical school.

In addition, the Section sponsors a Roundtable Luncheon Series that brings freshmen students together with practicing physicians to discuss legal, ethical and regulatory aspects of the practice of medicine. For upperclassmen, Advanced Seminars are held that may allow students to meet and discuss timely issues with state leaders or visit with physicians in various specialties in order to assist in making their career decisions.

In addition, students in Tulsa sponsor a highly successful AIDS Speakers Bureau. In Oklahoma City, students also have formed an AIDS Speakers Bureau and are working on a presentation to be taken to schools to encourage students to enter medicine or other health professions.

OSMA sends student delegates to the AMA Medical Student Section meetings.

Medical students also are encour-

aged to attend OSMA Council and Board of Trustee meetings.

Budget request: $11,000.00

Report of the HOSPITAL MEDICAL STAFF SECTION

Subject: **Annual Report**
Presented by: William O. Coleman, MD, Chairman
Referred to: Reference Committee II

Introduction

During the opening session of the 1986 House of Delegates, the OSMA House passed an amendment to the OSMA Constitution allowing for the creation of the OSMA Hospital Medical Staff Section. The purpose of this Section is to provide a direct means whereby the Medical Association can address the relationship among members of the OSMA, hospital medical staffs, and hospitals.

Review of Activities

During 1989, the Section's Governing Council met to explore and discuss the various issues affecting Hospital Medical Staffs. The items bringing the greatest discussions were the "Denial of Payment for Substandard Quality of Care" and the "Proposed Rules for Reporting Information" as outlined and set forth by the Health Care Quality Improvement Act of 1986. Following discussion of these items, the OSMA-HMSS recommends that the following action be taken.

Recommendations

The OSMA-HMSS requests that the OSMA General Counsel prepare a paper, similar to the Illinois State Medical Society, which will describe and address the requirements of the Health Care Quality Improvement Act of 1986. The OSMA-HMSS further recommends that following the completion of the paper, the Provisions of the Act be published in the OSMA JOURNAL. A portion of the Illinois paper is attached to this report.

Conclusions

It is the goal of the OSMA Hospital Medical Staff Section to increase its membership and to take those steps necessary to achieve this goal. The Section will continue to represent itself in the OSMA House, as well as the American Medical Association Hospital Medical Staff Section.

Respectfully submitted,
William Coleman, MD, Chairman

HEALTH CARE QUALITY IMPROVEMENT ACT OF 1986: WHAT PHYSICANS NEED TO KNOW ABOUT THE ACT

PREPARED FOR
THE ILLINOIS STATE MEDICAL SOCIETY
BY
SAUL J. MORSE, ESQUIRE

The Health Care Quality Improvement Act of 1986 was adopted by Congress with the stated goal of attempting to curb medical malpractice and improve the quality of medical care. The Act attempts to achieve these goals by encouraging effective peer review by immunizing peer review activities from civil monetary damages. The Act also creates a mandatory reporting system, called the National Data Bank, with the hope that mandatory reporting to the Bank and the availability of the Bank's information to hospitals in the credentialing process will restrict the ability of incompetent physicians to move from state to state.

The Act is critical to ISMS members, because it affects the rights and responsibilities of physicians involved in the peer review process in every setting, whether a hospital medical staff, an HMO or any other. The creation of a National Data Bank is also something that physicians need to be aware of, as the information contained in the Bank will clearly be used in the credentialing and re-credentialing process.

The Act has two totally separate and distinct areas: 1) provision for immunity from civil damages suits for health care entities, medical staff members and other persons providing information to peer review bodies, for actions taken as part of the peer review process, where the physician is afforded certain minimum due process rights; and 2) an elaborate reporting scheme which requires reporting of malpractice claims, settlements and judgments paid on behalf of physicians, as well as requiring reporting of certain professional review actions taken by health care entities and state boards which license physicians. What follows is a discussion of what the immunity provisions of the Act protect against, what "due process" is required in order for the immunity to attach, and a discussion of the reporting required to the National Data Bank and the information available from the Bank.

Immunity Provisions of the Act

What does the Immunity Provision of the Act protect against?

The Act provides that no person who participates in a professional review action can be held liable for money damages under any state or federal law based upon the professional review action or their participation therein. This provision would prohibit a physician whose privileges at a hospital have been suspended from being able to recover money damages from those involved in the peer review process which resulted in the suspension such as physicians on the Peer Review Committee. The suspended physician would still be able to sue for the restoration of his staff privileges.

Who is protected from civil liability under the Act?

The Act provides immunity to the professional review body itself and its staff, as well as to any person who provides information to the professional review body. That means that all of the physicians on the hospital's medical staff Peer Review Committee, all the people who make and review the decisions of the Committee, all physicians and others who testify at the hearing or provide information to the Review Committee, as well as the "health care entity" itself, are covered by the Act's immunity from civil damage suit, so long as certain minimum due process rights are afforded to the physician. The Act defines "health care entity" to include hospitals and any other entity that provides health care services and that follows a formal peer review process, and including HMOs and group medical practices. Also included in the definition of health care entity are medical societies that have formal peer review processes.

What are the prerequisites for obtaining the immunity from civil suit?

In order for physicians and hospitals to be entitled to the Act's immunity, the peer review action or professional review action must be taken: 1) in the belief that the action was taken to further the quality of health care; 2) after effort has been made to obtain the facts; 3) after the physician against whom the action is contemplated is given notice of the action and a fair hearing or, at least the opportunity for a fair hearing should he so desire; and 4) that the action taken was justified by the facts known.

Clearly, the problem with the foregoing four elements is that they are all very subjective and there are really no hard and fast rules for what behavior will be acceptable and therefore clearly covered by the immunity provisions of the Act. All that can be said at this juncture is that physicians involved in the peer review should make sure that the decisions they make regarding peer review are based on their belief that the action they are taking is in furtherance of the quality of care and that they personally believe that a reasonable effort has been made to obtain the facts of the matter. In addition, to the extent that physicians are involved in the giving of notice and the affording of hearing procedures through their participation on medical staffs and in drafting medical staff bylaws, physicians should encourage the use of notice in hearing procedures which conform to the requirements of the Act, as will be discussed below. Finally, physicians participating in peer review should personally believe that any peer review actions which they take are justified based upon the facts known after there has been an effort to obtain those facts.

What is the minimum "due process" required by the Act in order for physicians and hospitals to be immune from civil suit?

The Act is fairly specific in the minimum due process rights to be afforded to the physician as part of the disciplinary hearing process. A checklist of the minimum due process hearing rights follows:

(1) written notice of the proposed discipline;

(2) reasons for the proposed action;

(3) the notice should include the physician's right to request hearing on the proposed action and a time limit of not less than 30 days within which to request such a hearing;

(4) if a hearing is requested, a second notice must be sent to the physician stating the place, time and a date for the hearing of not less than 30 days after the notice, as well as a list of witnesses expected to testify at the hearing on behalf of the hospital;

(5) if a hearing is requested, the hearing is to be held either before a mutually acceptable arbitrator or before a hearing officer or panel appointed by the hospital which is made up of persons who are not in direct economic competition with the physician involved;

(6) at the hearing the physician has the right to be represented by an attorney;

(7) the physician has the right to have a record made of the hearings; to call, examine and cross-examine witnesses and present relevant evidence at the hearing; and to submit a written statement at the close of the hearing;

(8) upon completion of the hearing, the physician has the right to receive a written recommendation of the arbitrator or panel including a statement of the basis for that recommendation, as well as receiving a written decision by the hospital which includes a statement of the basis for the decision.

The Act also permits that in lieu of providing the above-listed rights to the physician being disciplined, the immunity will still attach if the conditions are voluntarily waived by the physician. Further, the Act does not require slavish adherence to the above-listed rights and the peer review body may provide fewer or different rights and still be immune. However, by giving the physician the above-listed rights it is more likely that any action taken by the peer review body will be immune from civil damage suit. Any modifications might necessitate a court challenge to determine whether adequate due process was given before immunity would attach.

There is also a specific exemption from the provision of the above-listed due process rights for immediate sus-

pension or restriction of clinical privileges in the case of health emergencies, where the physician is given a subsequent notice and hearing on the suspension or restriction. Further, a suspension of less than 14 days during which an investigation is being conducted to determine the need for a peer review action is permissible without affording the above-listed due process rights prior to the suspension.

Of the above checklist of minimum due process hearing rights, number 5 should be discussed further. The Act permits the health care entity to determine before whom the peer review hearing requested by a physician will be held. Specifically, the health care entity may chose among the following groups: 1) an arbitrator mutually acceptable to the physician and the health care entity; 2) a hearing officer appointed by the entity who is not in direct economic competition with the physician; or 3) a panel of individuals appointed by the health care entity who are not in direct economic competition with the physician.

These requirements are controversial and contradict ISMS policy in this area. If has been ISMS policy that a majority of the members of the Peer Review Committee be from the same specialty as the physician who is subject to the review. Certainly, in smaller communities, every physician who practices within a particular medical specialty can, and likely will, be considered to be an economic competitor of every other physician in the same specialty. Thus, at least in those smaller communities, physicians in the same specialty will not be able to sit on the Peer Review Committee. One possible solution will be for the health care entity to use an arbitrator to make the peer review decision and simply permit physicians within the same particular specialty to testify at hearing. Another possiblity may be for the hospital or health care entity to bring in physicians from a different town, so that at least physicians of the same specialty are reviewing the performance of the physician who is subject to the peer review action. The decision of who will make the peer review decision is one that should be carefully watched by medical staffs and individual physicians to ensure that the immunity provisions of the Act will be available to them and also to ensure that the process is a fair one.

Report of the OKLAHOMA FOUNDATION FOR PEER REVIEW

The past year has been a year of transition for the Oklahoma Foundation for Peer Review. The majority of the time was spent successfully renewing the Medicare contract under a competitive bid against an Arkansas-based, physician-access organization, and the subsequent implementation of the Third PRO Scope of Work. The OFPR wishes to take this opportunity to acknowledge and publicly express our appreciation for the assistance provided by OSMA during the contract renewal process.

Highlights of the changes include an even greater emphasis on the quality of care to include a very specific quality review process with increased emphasis on education for identified quality programs. The scope of the review also has expanded to include hospital outpatient departments and free-standing surgical centers, the review of all organized health care provided during the intervening period between two hospitals admissions occurring within 31 days, and the inclusion of the CHAMPUS Program.

Future agenda items which are currently being discussed include the use of the Codman Research Group's Small Area Analysis to determine practice variations and potential educational topics, continued development of quality parameters (developmental parameters are currently being developed by some specialty societies), and the HCFA effectiveness agenda which will be utilized to track beneficiaries' health status over time, based on different treatment modalities.

Respectfully submitted,
Jim L. Williams
Executive Director

Report of the JOURNAL OF THE OKLAHOMA STATE MEDICAL ASSOCIATION

An Addendum to the Report of the Council on Professional and Public Relations

Subject: **Annual Report**
Presented by: Mark R. Johnson, MD, Editor-in-Chief
Referred to: Reference Committee II

Introduction

The JOURNAL of the Oklahoma State Medical Association has maintained its position as one of the nation's finest medical publications by providing its readers with timely, significant scientific articles and special feature stories. It continues to serve as an open forum for the exploration and discussion of issues vital to the physicians of Oklahoma and remains a popular and important benefit of membership in the association.

Special Award from Sandoz

The JOURNAL has received national recognition once again, winning a Special Award in this spring's 14th annual Sandoz Pharmaceuticals medical journalism competition. This is the second award in three years for the JOURNAL, which won First Prize in 1987 and was thus ineligible for the 1988 competition. The JOURNAL also earned top honors in 1978 and Honorable Mention in 1983.

In excellent company this year, the JOURNAL (circ. 3900) finished second only to the much larger *Journal of the Florida Medical Association* (circ. 16,000) and tied with the *Journal of the Medical Association of Georgia* (circ. 7700), also a Special Award winner.

Awards are based on design and editorial content. A Sandoz release called Editor-in-Chief Mark Johnson's editorials and the Leaders in Medicine articles "outstanding." Judge Paul Fisher, professor at the University of Missouri School of Journalism, had "nothing but praise," saying the JOURNAL has always handled its specifications and pages with "care and thought." He commended the JOURNAL's "very distinctive cover," saying, "it's the sort of persnickety attention to detail that you expect to see in the JOURNAL."

Twenty-two prizes were awarded this year to publications in four categories — state medical journals, county and city medical publications, state pharmaceutical publications, and journals and other nonemployee publications produced by hospital and medical groups.

Editoral Board Changes

At the February 5, 1989, meeting of the OSMA Board of Trustees, Ray V. McIntyre, MD, Kingfisher, was chosen to succeed Mark R. Johnson, MD, Oklahoma City, as the JOURNAL's editor-in-chief. Dr McIntyre will assume the post in May after completing his current term as OSMA president.

The Board of Trustees also named Robert L. Scott, MD, Tulsa, to complete the unexpired term of editor Donald L. Brawner, MD, Tulsa, who announced his retirement in January. Editor Harris D. Riley, Jr., MD, whose term expired this year, was appointed for another term.

Review of Activities

In 1988, the JOURNAL published 20 scientific manuscripts and 11 other major articles representing the efforts of 66 different authors. Also, in addition to the JOURNAL's regular monthly features, the complete text of the Oklahoma State Department of Health AIDS Task Force Recommendations

was reprinted, and nine articles appeared in the AIDS Update series.

The Leaders in Medicine series continues, focusing on state physicians who have made significant contributions to Oklahoma medicine and who, in the opinion of the Editorial Board, deserve to be recognized for their accomplishments. The October 88 issue featured Hayden H. Donahue, MD.

Charlotte S. Leebron Award

The Editorial Board has named Dr. Thomas D. Tinker, Bartlesville, and Dr. Teresa M. Stacy, Oklahoma City, the winners of the 1988 Charlotte S. Leebron Award. The $500 Leebron Award, presented at the OSMA Annual Meeting, goes to the physician author(s) of the best scientific paper published in the JOURNAL each year. The winning paper, "Ten Caveats in the Early Management of Acute Epiglottitis in Children," appeared in the August 1988 JOURNAL. Board members praised the paper as a "real teaching article," a "practitioner's guide," and a "clever presentation."

Budget

Effective January 1, 1989, subscription rates were increased to $20 a year for members and $30 for nonmembers; advertising rates were increased 15%.

A number of production and format changes have been implemented since July 1988 in an effort to reduce expenses by some $20,000 over the previous fiscal year. As a result, 1988 printing and binding costs alone totaled $15,000 less than for 1987, despite a 5% rate increase by the Transcript Press at midyear. It appears that the desired reduction in expenses for the fiscal year will be achieved.

Respectfully submitted,
Mark R. Johnson, MD,
Editor-in-Chief
Harris D. Riley, Jr., MD, Editor
Robert L. Scott, MD, Editor
Susan Records, Managing Editor

The "Sing, America, Sing" choral group from the University of Oklahoma performs after the Inaugural Dinner. Their rousing selections earned frequent applause and a standing ovation from the enthusiastic audience.

Reference Committee III

REPORTS TO THE HOUSE OF DELEGATES

Chairman Bonnie J. Ashing, MD, Tahlequah, delivers her reference committee's report to the House of Delegates.

Report of REFERENCE COMMITTEE III

Presented by: Bonnie J. Ashing, MD, Chairman

Mr. Speaker and Members of the House of Delegates, Reference Committee No. III has carefully considered the items which were referred to it and submits the following report:

(1) Report of the Council on Governmental Activities

Reference Committee III wishes to recognize and commend the outstanding work of this Council under the leadership of Council Chairman Perry A. Lambird, MD.

Recommendation:

Mr. Speaker, your Reference Committee recommends that the Report of the Council on Governmental Activities be adopted.

(2) Report of the Council on State Legislation

Reference Committee III wishes to recognize the importance of the Council on State Legislation and commends all members on the Council and Chairman Larry L. Long, MD.

Recommendation:

Mr. Speaker, your Reference Committee recommends that the Report of the Council on State Legislation be adopted.

(3) Report of the Council on Member Services

Reference Committee III commends all members of this Council including the Chairman, William Bernhardt, MD.

Recommendation:

Mr. Speaker, your Reference Committee recommends that the Report of the Council on Member Services be adopted.

(4) Report of the Oklahoma Medical Political Action Committee

Reference Committee III wishes to recognize and commend the outstanding work of this Committee and its Chairman, Larry L. Long, MD. Reference Committee III notes the work done by Mrs. Camille Harrison to encourage membership in the PAC by physician spouses.

Recommendation:

Mr. Speaker, your Reference Committee III recommends that the Report of the Oklahoma Medical Political Action Committee be adopted.

(5) Report of the Physician Recovery Committee

Reference Committee III has reviewed the Report of the Physician Recovery Committee and notes significant growth in the program. The Committee wishes to express its appreciation to J. Darrel Smith, MD, Medical Director and Mason Lyons, MD, Assistant Medical Director for their commitment to the program. The OSMA Physician Recovery Program remains a national model.

Recommendation:

Mr. Speaker, your Reference Committee III recommends that the Report of the Physician Recovery Committee be adopted.

(6) Report of the Physician Legal Action Support Committee

Recommendation:

Mr. Speaker, your Reference Committee III recommends that the Report of the Physician Legal Action Support Committee be adopted.

(7) Resolution 2 — Direct Funding to University of Oklahoma Health Sciences Center

Reference Committee III heard considerable testimony on this issue. Several physicians expressed concern that bypassing the Regents for Higher Education could be counterproductive for the funding of medical education in Oklahoma. However, it was clear in all discussions that funding for medical education must be increased.

Recommendation:

Mr. Speaker, your Reference Committee III recommends that Resolution 2 not be adopted and that the following Substitute Resolution 2 be adopted:

"*Resolved,* That the Oklahoma State Medical Association work to obtain adequate funding for the University of Oklahoma Health Sciences Center."

(8) Resolution 3 — Dedicated Tax on Tobacco Products

Reference Committee III heard considerable comments on this issue. After much discussion, it was decided that in addition to tobacco, alcohol products should also be taxed to help increase funding for medical education. The Reference Committee also felt that rather than changing the current utilization of tobacco and alcohol taxes, the Legislature might be more favorably disposed to earmarking an additional tax on these products toward medical education.

Recommendation:

Mr. Speaker, your Reference Committee III recommends that Resolution 3 not be adopted and that the following Substitute Resolution be adopted:

"*Resolved,* That the Oklahoma State Medical Association create, introduce and/or support legislation in the Oklahoma State Legislature that would place an additional tax on all tobacco and alcohol products, and be it further

Resolved, That this additional tax be dedicated to the funding of medical education to the Oklahoma Health Sciences Center."

(9) Resolution 14 — Physician Advertising

Reference Committee III heard considerable testimony regarding this Resolution and agrees wholeheartedly with its intent. Quite clearly on a day-to-day basis Oklahoma physicians demonstrate their caring, compassionate nature. It is unfortunate that so many of these acts are unrecognized by the media and even the public. Therefore, this Reference Committee recommends the following Substitute Resolution.

Recommendation:

Mr. Speaker, your Reference Committee III recommends that Resolution 14 not be adopted and that the following Substitute Resolution be adopted:

"*Resolved,* That the Oklahoma State Medical Association engage in an active program to enhance the image of physicians including educating the people of Oklahoma of the charitable and compassionate acts of Oklahoma physicians and their ongoing role as patient advocates."

(10) Late Resolution 16 — Physician Legislative Districts

Reference Committee III feels it is imperative for the Oklahoma State Medical Association to have the capability to contact physicians easily and quickly when it is necessary to ask them to reach their local legislator on an issue affecting Oklahoma medicine. The Oklahoma State Medical Association already has some 800 physicians involved in its key contact program. Through the Auxiliary, an additional 1,000 physicians are identified by their legislative districts. In order to further this program, the cooperation of physicians in providing their home addresses is imperative.

Recommendation:

Mr. Speaker, your Reference Committee III recommends that Resolution 16 not be adopted and that the following Substitute Resolution be adopted:

"*Resolved,* That the Oklahoma State Medical Association enhance its efforts and expeditiously identify physician members in their legislative districts; and be it further

"*Resolved,* That the Oklahoma State Medical Association members cooperate in obtaining this data by providing their home addresses and names of their legislators."

(11) Late Resolution 19 — Congressman Mike Synar

Reference Committee III wishes to note for the record that this Resolution is offered jointly by the Tulsa County Medical Society and the East Central County Medical Society. Reference Committee III heard much testimony regarding Congressman Synar's role in trying to establish a smoke-free society in the United States. For these efforts, the Congressman deserves support and gratitude of all physicians who are concerned with this threat to public health.

Recommendation:

Mr. Speaker, your Reference Committee III recommends that Resolution 19 be adopted.

(12) Late Resolution 20 — AMA Voluntary Membership

Reference Committee III notes that no one was present to speak in favor of this Resolution but many physicians expressed their support for the AMA. Indeed it appeared to be the general feeling that it is more important than ever that physicians remain united. The Committee was also informed that this Resolution was an individual Resolution and did not have the endorsement of the Tulsa County Medical Society.

Recommendation:

Mr. Speaker, your Reference Committee III recommends that Resolution 20 not be adopted.

(13) Late Resolution 21 — Utilization Parameters

Reference Committee III feels that the recommendations contained in Resolution 21 are of the utmost importance. Various utilization review requirements by third party payors have disrupted the doctor-patient relationship both in the office and in the hospital. Their effect on quality of care is also a growing concern.

Recommendation:

Mr. Speaker, your Reference Committee III recommends that Resolution 21 be adopted and referred to the Oklahoma State Medical Association Board of Trustees for action.

(14) Late Resolution 23 — Continuing Medical Education

Reference Committee III recognizes that the education of a physician is an ongoing process that truly never ceases. It is also clear that various entities are becoming more concerned with testing physicians for relicensure or establishing other mechanisms to ensure continued competence.

Recommendation:

Mr. Speaker, your Reference Committee III recommends that Resolution 23 be adopted.

Mr. Speaker, Reference Committee III moves adoption of this report as a whole.

Mr. Speaker, as Chairman of this Reference Committee, I would like to thank the Committee members and the staff for their cooperation and their work on this report.

Respectfully submitted,
Bonnie J. Ashing, MD,
Tahlequah, Chairman
Charles L. Lackey, MD, Norman
G. Lance Miller, MD, Tulsa
David C. Richardson, MD, Tulsa
William L. Hughes, MD,
Oklahoma City
Philip Mosca, MD, Oklahoma City
J. Carl Hallford, MD, Guymon
Mike Sulzycki, Staff
Bobbie Brown, Staff

Report of the COUNCIL ON GOVERNMENTAL ACTIVITIES

Subject: **Annual Report**
Presented by: Perry A. Lambird, MD, Chairman
Referred to: Reference Committee III

Introduction

The Council shall review federal legislation and regulation of concern to the medical profession or the public health, and shall initiate activities or undertake appropriate responses on matters of priority interest. It shall also establish and maintain relations with federal government entities having statutory or regulatory jurisdiction affecting the medical profession, the delivery of health care, or the public health. In cooperation with other association councils and committees, it shall develop policy recommendations for consideration by the Board of Trustees, and it shall prepare testimony and otherwise conduct the federal legislative program of the association.

Washington Activities

The Council continues to represent OSMA in Washington, D.C., through its Congressional visits. During 1988-89 and OSMA Delegation, headed by OSMA President Ray V. McIntyre, MD, met with and made regular contact with each member of Oklahoma's Congressional Delegation and their key health aides. It is the belief of this Council that the continuation of our Washington visits will enable the OSMA opinions and statements to be heard in a most effective manner. Although Oklahoma's visits to Capitol Hill were at one time unique within the AMA Federation, today roughly 50 percent of the Federation has a similar visitation program.

Single-Zone Reimbursement

For the past several years, it has been the quest of this Association to reduce the five-zone reimbursement areas into one statewide zone. Although we have yet to obtain a single statewide zone, we are nonetheless making progress. To date the OSMA has testified before Congressman Synar's Rural Health Conference, prepared position statements and developed background information for each Congressman, as well as for Governor Henry Bellmon. The Council is also attempting to amend S 306 by Senator Lloyd Bentsen of Texas, as a potential means of addressing the plight of the rural physician. The OSMA is also continuing its one-zone discussion with Mr. Jerry Sconce of the Health Care Financing Administration, as well as Oklahoma's carrier for Medicare, Aetna Life.

Clarence Robison, Jr., MD, and William O. Coleman, MD, both of Oklahoma City, discuss the day's agenda.

Presently, the OSMA is waiting for the White House to give direction to the Health and Human Services Division regarding this issue. However, as time passes, the proponents of a single-reimbursement zone continue to increase as more states attempt to adopt new payment zones. The Council will continue in its efforts to erase the unfair discrimination against rural patients, physicians and hospitals through the adoption of a fair, single Medicare reimbursement zone in Oklahoma.

H.R. 939/Physicial Referral

California Congressman Fortney "Pete" Stark, once again, has introduced his "Ethics in Patient Referrals Act of 1989." This legislation is intended to deal with a diverse wave of commercial activity that has the principal purpose of attempting to "lock in" a referral base for a particular provider by creating a network of financial relationships that bind referring physicians to the provider.

The AMA and the OSMA are watching this legislation closely. It is our current position that, without a doubt, efforts must be taken to identify physicians engaged in unethical referral practices; however, the bill contains broad prohibitions that are neither necessary nor acceptable. Presently, there is no evidence of widespread abuse or overutilization, and a ban on physician referrals without regard to harmful impact in terms of patient access to services and facilities must be studied. The OSMA and AMA are urging Congress to await the results of the studies being done by the General Accounting Office and the Office of Inspector General in order to determine what, if any, legislation is needed.

Report MM/Reform of Medicare

The AMA has stated its intentions to reintroduce HR 4455 in mid-April 1989. The legislation would transform Medicare from a payment transfer system to a pre-funded program that would assure adequate funding for the next generation of the elderly. An additional item in the bill may call for the creation of a bipartisan commission on Medicare reform.

Mandatory Assignment

HR 155 was reintroduced into the 101st Congress on January 3, 1989. The bill's sponsor, Congressman Don-

nelly, was referred to the House Ways and Means and the Energy and Commerce Committees. As in the past, both the AMA and OSMA oppose this legislation.

Regulations

On January 18 the Health Care Financing Administration published a notice of proposed rulemaking on "Denial of Payment for Substandard Quality of Care and Review of Beneficiary Complaints." These regulations set forth the rules by which PROs could deny Medicare payment for services that do not meet recognized standards of care. These rules would apply only to inpatient hospital services.

The AMA and OSMA are concerned that although the statute requires beneficiary notice, in the proposal PROs would be required to notify beneficiaries of denial *before* the physician has had an opportunity for a reconsideration. A second concern is that there is no requirement for the PRO to consult with state medical societies on the development of written criteria for conducting quality reviews.

Additional regulations include "Safe Harbor" regulations that will implement the Fraud and Abuse Act of 1987. The regulations outline criteria for permissible business arrangements for physicians. HCFA is presently seeking input on these regulations.

FY 1990 Budget/Health

Attached to this Council Report is a comparison between the two Administrations regarding the Health Budget. The Council will keep the OSMA apprised of all future developments as they are deliberated.

Budget Request: $27,500*

(*Includes salary of John Montgomery)

Respectfully submitted,
Perry A. Lambird, MD, Chairman
Richard J. Boatsman, MD
William D. Borkon, MD
Ed L. Calhoon, MD
Charles D. Cook, MD
Raymond L. Cornelison, Jr., MD
Jerome M. Dilling, Jr., MD
Norman L. Dunitz, MD
Curtis E. Harris, MD
Thomas A. Marberry, MD
G. Lance Miller, MD
Philip Mosca, MD, PhD
George M. Pikler, MD
Christian N. Ramsey, Jr., MD
Ronald H. White, MD
Larry L. Long, MD
Vaughndean Fuller, Auxiliary
Paulette Krueger, Auxiliary
Jan Storms, Auxiliary
Sherry Strebel, Auxiliary
John Montgomery
Robert W. Baker, OSMA Staff

FY 890 BUDGET — HEALTH
REAGAN VS. BUSH

REAGAN

Medicare Cuts Total $5 Billion
Total Part B Cuts $1 B

PROVISION	CUTS
Provider	
• MEI Freeze for non-primary care	$375 M
• Anes/Rad/Surg — 8% cut prevailing	250 M
• Additional cuts in Overpriced Procedures	100 M
• Freeze Clinical Lab payments	190 M
• Eliminate payments for Surgeon supervision of CRNAs	10 M
Programmatic	
• ESRD payment revisions	50 - 85 M
• Medicare Carrier Cuts	400 M

Medicare Part A: $3 Billion

PROVISION	CUTS
• Indirect GME reduction (from 7% to 4.05%)	$1 B
• Capital payment reduction (25% reduction)	1.5 B
• PPS update: Market basket minus 2%	725 M

Effectiveness Initiative — proposed $52 Million in funding for PHS activities.
NIH/AIDS — 24% INCREASE
Medicaid — $1.1 Billion cut

BUSH

Total Medicare Cuts: $5 Billion. Bush provided no recommendations on allocating specific % of the cuts to Part A vs. Part B.

Part B Cuts: Bush provides no specific recommendations, only "limiting the increase in payments to physicians." Reagan proposal may form the hasis for negotiation with Congress.

Part A Cuts: Capital payment reduction: same as Reagan
Indirect GME reduction: same as Reagan
PPS update: Bush provides no specific recommendations, only "limiting the increase in payments to hospitals."

NIH/AIDS — same as Reagan

Medicaid: $1.6 hillion *increase* slated for pregnant women, infants: 130% poverty level, and immunizations for poor children under 5. The expanded benefits will be paid for however by decreasing federal matching rates (funds) for certain Medicaid administrative costs incurred by States.

NOTE:
1. Bush calls for additional unspecified cuts of at least $9.6 hillion — subject to negotiation with Congress.
2. Both the Reagan and Bush budgets rely on extremely optimistic economic forecasts — disputed by CBO.
3. For some federal programs, Bush dramatically departs from tradition by substituting outlays for the current services baseline used by the Reagan Administration. By using outlays rather than the current services level the Bush budget unrealistically ignores projected increases in the number of heneficiaries and increases in utilization for Medicare or Medicaid.

Report of the COUNCIL ON STATE LEGISLATION

Subject: **Annual Report**
Presented by: Larry L. Long, MD, Chairman
Referred to: Reference Committee III

Introduction

The purpose of the Council on State Legislation is to review all legislation introduced in the Legislature that directly or indirectly affects the quality of medical care and the practice of medicine in the State of Oklahoma. Historically, the Council has met at the same time the Legislature is in session. Introduced bills are placed on the Council's agenda, reviewed and a position taken. This is a tedious and time consuming process as the Council reviews some two hundred pieces of legislation each year.

Long Range Goals

For the Council to put into effect its long-range goals we need to take into account the passage of the state question which will shorten legislative sessions. Session will convene the first Monday in February and adjourn the last Friday in May. This new schedule is going to require us to do more work in the interim in order to respond quickly to legislative demands.

1. The Council on State Legislation should meet on a monthly basis except during the months the Legislature is in session. During session the Council should meet every two weeks.

2. The Council may function as a subcommittee and not meet as a committee of the whole when the Legislature is not in session.

3. Committee work done by the Council when the Legislature is not in session should be to facilitate both long-term and short-term legislative goals.

4. The Council should identify short-term issues that will be on the upcoming legislative agenda and be responsible for preparatory work to be presented before the Legislature.

5. The Council should identify long-term issues that will be before our Legislature in the next five to ten

years. Preparatory work should be done in anticipation of complex issues, positions should be taken, and an educational process should begin with physicians and the Legislature.

6. The Council should identify medical issues that are not being addressed by the Legislature and assume a leadership role in addressing those issues.

7. The Council should be well represented in each specialty. Those specialties in common should form a subcommittee and all legislation being considered or introduced impacting that specialty should be referred to that subcommittee for special consideration before coming before the full Council. (During session it would require introduced bills to be mailed to the appropriate subcommittee members so they can review and make recommendations to the full committee.)

8. When the Legislature is not in session, two meetings each year should be held outside of Oklahoma City.

9. The Council should provide the Association support in the task of putting all physicians and their legislative districts on computer.

Respectfully submitted,
Larry L. Long, MD
Chairman

*For an up-to-date list of the bills being monitored by this council, contact the OSMA.

Report of the COUNCIL ON MEMBER SERVICES

Subject: **Annual Report**
Presented by: William Bernhardt, MD, Chairman
Referred to: Reference Committee III

Introduction

The Council on Member Services is charged with the responsibility of researching and developing programs and/or services that directly benefit the members of the OSMA.

Review of Activities

The Council on Member Services has continued to monitor all of the endorsed OSMA programs to determine their effectiveness and profitability. The council studied two lines of business needing some improvement. The first was in the area of disability income insurance. Over the years, the OSMA disability program had updated its coverage by simply offering a new set of benefits for new policyholders. This led to the realization that the OSMA had four groups of doctors in the disability program based upon when they had first taken out the coverage. After study by the council, it was decided to endorse a new policy that would be more competitive by containing all of the latest benefits. All of the physicians that were enrolled in the various policies endorsed by the OSMA were allowed to convert their coverage to the new updated and better policy, oftentimes at little or no premium increase. This project has progressed very smoothly with positive responses. During the latter parts of this conversion period, the OSMA has increased its marketing effort for the new disability program.

The second area of study was the OSMA-endorsed Workers' Compensation insurance. The previous carrier had indicated it was pulling out of the workers' comp market and that the council would need to start investigation into selecting a new carrier. After studying several options including self insurance, the council decided to endorse a new Hartford Workers' Compensation insurance offered through C.L. Frates. The group already contains a number of medical doctors which would enhance the program. The endorsed program has a year-end dividend of up to 25% based on the group experience. This dividend would be sent to the individual physician policyholder to offset his or her premium. The marketing of this coverage is being conducted presently.

The council continues to offer seminars of interest to the medical doctor and office staff. With the importance of the ICD-9 code being required on the Medicare claim form, the council is pursuing a series of coding seminars prior to the June 1 effective date.

The council is also studying numerous projects that would be of interest to the OSMA membership. Many of the items offered through Member Services will be listed in the *OSMA News*, OSMA JOURNAL, and as a part of the new OSMA membership brochure produced jointly by this council and the Council on Professional and Public Relations.

I personally want to thank the members of this council and staff who have put in a great number of hours in reviewing proposals and studying documents in order to make decisions in the best interest of all OSMA members.

Respectfully submitted,
William Bernhardt, MD, Chairman
Richard A. McKinne, MD
Tim S. Caldwell, MD
Jack T. Dancer, MD
E. Edwin Fair, MD
Wilfred S. Gauthier, MD
Joe Ray Hamill, MD
Thomas H. Hester, MD
John F. Josephson, MD
Herbert M. Kravitz, MD
Gene L. Muse, MD
Paul O. Shackelford, MD
S. Fulton Tompkins, MD
Lyle Kelsey, Staff

Report of the PHYSICIAN LEGAL ACTION SUPPORT COMMITTEE

Subject: **Annual Report**
Presented by: Orange M. Welborn, MD, Chairman
Referred to: Reference Committee III

Introduction

Purpose — to respond to physicians and their families whenever there are lawsuits or accusations that result in adverse actions against physicians.

Scope — activities of the committee should include prevention, coping with the current situation, rehabilitation and coping with the aftermath.

Composition — the committee should be broad-based geographically and by specialty and include equal numbers of physicians and auxilians and some representation from psychiatry.

Review of Activities

The committee will purchase a quantity of videocassettes entitled "The Malpractice Suit: A Survival Guide for Physicians and Their Families," produced by Frederick Gale, M.D., Executive Vice President

of Eidetics, Inc., Boston, Massachusetts, and work with the PLICO Loss Prevention Committee to discuss its application.

Any OSMA member who is being sued will be sent a letter offering a copy of the videotape to view in a nonintrusive way, to be of some support to the physician and his family during this crisis. As a part of the letter and tape, the physician will be told about the Legal Action Support Committee and offered any additional counseling and/or support that the physician or family may need on a personal basis.

The committee will rely on the support and active involvement by the Auxiliary members of this committee.

The committee, in conjunction with the PLICO Loss Prevention committee, will develop a series of booklets to make available to the physician and his family that will relate to specific areas of a malpractice suit in Oklahoma. It will include dealing with the legal world of lawsuits, dealing with the personal aspects of a lawsuit, and dealing with family and colleagues during and after a lawsuit.

The committee will research the possibility of developing a resource library for OSMA members with materials relating to support during litigation.

Respectfully submitted,
Orange M. Welborn, MD, Chairman
M. Joe Crosthwait, MD
J. Hartwell Dunn, MD
J. B. Eskridge III, MD
Boyd K. Lester, MD
Leo Meece, MD
Fred W. Weber, MD
Mrs. Susan Brown
Mrs. Mary Ann Deen
Mrs. Jan Milton
Mrs. Pam Oster
Mrs. Jan Storms
Mrs. Julie Weedn
Lyle Kelsey, Staff

Report of the OKLAHOMA MEDICAL POLITICAL ACTION COMMITTEE

Subject: **Annual Report**
Presented by: Larry L. Long, MD, Chairman

Bobby Alexander, grandson of 1989-90 OSMA President John R. Alexander, MD, enjoys the hors d'oeuvres at the Inaugural reception.

Referred to: Reference Committee III

Introduction

The Oklahoma Medical Political Action Committee is a voluntary, unincorporated entity made up of individual physicians and spouses interested in helping political candidates become elected to office. OMPAC is an independent and autonomous organization managed by a Board of Directors. The Board of Directors has control over the policies and activities of the Committee and serves without compensation. The OMPAC Board conducts the business of the Committee and otherwise meets several times during an election year to distribute OMPAC funds to candidates.

Review of Activities

The Oklahoma Medical Political Action Committee is in the process of rebuilding its funds following election year 1988. A listing of candidates supported by OMPAC during the 1988 elections is attached to this report.

It is important to note that 1990 will be an extremely critical election year for OMPAC as we will be electing a Governor, Lt. Governor, Attorney General, an entire House of Representatives and 24 members of the Senate. 1990 will also offer Oklahomans with the opportunity to elect a United States Senator.

It is OMPAC's intention to represent organized medicine through careful study of all candidates running for office. However, OMPAC will need each physician's and spouse's support if we are to have the funds necessary to protect Medicine's interests.

Financial/Membership

The OMPAC financial report as of April 1, 1989 is:

Total dollars raised (1989):	$39,867.42
Less Contributions to AMPAC:	3,950.00
Sub Total:	$35,917.42
Less Contributions to OMPAC Education Account:	$ 960.00
Cash On Hand:	$34,957.42

The OMPAC membership as of April 1, 1989 is:

Auxiliary Membership:	124
Resident/Student Membership:	6
Regular Membership ($50.00):	366
Sustaining Membership ($100.00):	56
"200" Club Membership ($200):	15
Total Membership To Date	567

Conclusion

On behalf of the OMPAC Board of Directors I would like to thank each physician, spouse, resident, and student for your continued support of OMPAC.

Particularly, I would like to thank the Auxiliary and their OMPAC Chairman, Camille Harrison, for a beginning to an outstanding year.

OMPAC will continue to increase contributions and membership throughout 1989 as we build for the elections in 1990. OMPAC will continue to strive for excellence in every aspect of political action in our ongoing quest to protect not only physicians, but our patients as well.

Respectfully submitted,
Larry L. Long, MD
Chairman

Retiring OSMA President Ray V. McIntyre, MD, delivers a few parting words before . . .

. . . presenting successor John R. Alexander, MD, with the bronze medallion of the OSMA presidency.

OMPAC PICKS FOR NOV. 8!

The Oklahoma Medical Political Action Committee (OMPAC) Board of Directors met twice this fall to assess candidates on the November ballot. The following is a list of state and federal candidates the OMPAC Board chose to support (OMPAC candidates are listed first in capital letters. Abbreviations: SD [Senate District] and HD [House District]:

DIST.	COUNTY	CANDIDATE
SD 5	Pushmataha	R. CHANDLER (D) vs P. Miller (R)
SD 15	Garvin	T. WEEDN (D) vs B. Frost (R)
SD 19	Garfield	N. LAMB (R) vs E. Long (D)
SD 29	Washington	J. PIERCE (R) vs J. Cyrus (D)
SD 33	Tulsa	P. WILLIAMS (D) vs B. Weinrich (R)
SD 37	Tulsa	L. LONG (D) vs J. Riley (R)
SD 43	Oklahoma	B. BROWN (D) vs B. Gates (R)
HD 8	Mayes	L. RICE (D) vs G. Blunt (R)
HD 10	Washington	B. HOLLIMAN (R) vs G. Taylor (D)
HD 11	Washington	J. DUNLAP (R) vs T. Peterson (D)
HD 14	Muskogee	J. POTTS (D) vs J. Cole (R)
HD 23	Tulsa	K. EASLEY (D) vs Barbara Gunter (R)
HD 24	Okfuskee	G. JOHNSON (D) vs Eldon Burcham (R)
HD 34	Payne	L. GISH (D) vs C. White (R)
HD 35	Pawnee	L. FERGUSON (R) vs Cam Favaro (D)
HD 41	Garfield	J. McMILLEN (R) vs D. Brown (D)
HD 43	Canadian	H. HALE (D) vs B. Gooden (R)
HD 44	Cleveland	C. THOMPSON (D) vs J. Windes (R)
HD 45	Cleveland	C. HOBSON (D) vs V. Henry (R)
HD 46	Cleveland	V. WHITE (D) vs J. Smith (R)
HD 50	Stephens	E. APPLE (R) vs G. Christian (D)
HD 57	Custer	B. WIDENER (D) vs L. Salkow (R)
HD 58	Woods	E. MADDUX (R) vs D. McGill (D)
HD 62	Comanche	J. MADDOX (D) vs A. Besa (R)
HD 64	Comanche	S. HUDSON (D) vs E. Jantzen (R)
HD 66	Tulsa	R. ROACH (D) vs B. Guthrie (R)
HD 70	Tulsa	J. BRYANT (R) vs S. Collinson (D)
HD 71	Tulsa	R. JOHNSON (R) vs E. Morrison (D)
HD 78	Tulsa	F. PITEZEL (R) vs L. Turner (D)
HD 79	Tulsa	J. HENSHAW (R) vs M. Dunagan
HD 80	Tulsa	J. GORDON (R) vs R. Holman (D)
HD 81	Oklahoma	R. VAUGHN (R) vs T. Mitchell (D)
HD 88	Oklahoma	L. LARASON (D) vs K. Blood (R)
HD 89	Oklahoma	K. HUTCHCROFT (D) vs G. Grandstaff (R)
HD 90	Oklahoma	C. KEY (R) vs W. Gordon (D)
HD 91	Oklahoma	A. MUSSER (D) vs D. Webb (R)
HD 94	Oklahoma	G. BASTIN (D) vs M. Workman (R)
HD 98	Canadian	M. PYBAS (D) vs T. Pope (R)
HD 101	Oklahoma	J. HAMILTON (D) vs F. Roper (R)

CONGRESSIONAL DIST.	CANDIDATE
1	J. INHOFE (R) vs K. Glassco (D)
2	M. SYNAR (D) vs I. Phillips (R)
5	M. EDWARDS (R) vs T. Montgomery (D)
6	G. ENGLISH (D) vs M. Brown (R)

Report of the PHYSICIAN RECOVERY COMMITTEE

Subject: **Annual Report**
Presented by: Ted Clemens, Jr., MD, Chairman
J. Darrel Smith, MD, Medical Director
Referred to: Reference Committee III

Introduction

It is the purpose of the Committee to create and maintain an effective statewide non-coercive advocacy program for identifying, contacting, and offering rehabilitative help for physicians suffering from the diseases of alcoholism, chemical dependency or substance abuse.

Review of Activities

The effectiveness of the Oklahoma State Medical Association Physician Recovery Committee continues to grow.

Currently, there are 220 health providers being followed by the program. One hundred eighty of these are MD or DO physicians and medical students. The other forty are dentists, veterinarians, psychologists, pharmacists, or physician assistants.

These health providers are located in 42 communities in our state.

The breakdown by MD-DO specialty is:

FP/GP	61
SURG (Inclusive)	28
OB/GYN	10
OPHTH	5
ANES	8
PED	10
IM	16
ER	10
PATH	5
PSYCH	11
RAD	6
Med. Student	6
Miscellaneous	4

The dramatic growth in the programs has required more and more time involvement from the PRC Medical Director J. Darrel Smith, MD.

Last year the OSMA House of Delegates endorsed employing a full-time medical director. This year Doctor Smith was able to end his private practice to devote full time to the program.

The OSMA is one of only nine state societies to employ a full-time medical director.

Mason Lyons, MD, Tulsa, continues to serve as Assistant Medical Director for the program.

The OSMA/PRC relationship with the professional societies representing osteopaths, dentists and veterinarians remains strong.

PRC's relationship with the Oklahoma State Board of Medical Licensure and Supervision is the envy of many recovery programs across the nation.

The PRC will continue to serve as an advocate for physicians suffering from chemical or alcohol dependency or substance abuse.

Budget Request: $107,000.00

Respectfully submitted,
Ted Clemens, Jr., MD, Chairman
Homer V. Archer, MD
Ted J. Brickner, Jr., MD
John C. Chelf, MD
Donald L. Cooper, MD
Marcus L. Cox, MD
Carl F. Critchfield, MD
Frank Crowe, MD
Gordon Deckert, MD
David V. Eakin, MD
Robert G. Ellis, MD
James D. Gormley, MD
Donald C. Karns, MD
Thomas S. Llewellyn, MD
Mason Lyons, MD
George C. Moore, MD
James R. Rhymer, MD
Charles J. Shaw, MD
J. Darrel Smith, MD
Harold Thiessen, MD
V. William Wood, MD
M. Michael Sulzycki, Staff

The finale of the "Sing, America, Sing" review brings the Inaugural evening festivities to a close.

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*Joseph F. Messenbaugh III, MD, FACS
*J. Patrick Evans, MD, FACS
*Edwin E. Rice, MD, FACS
*Warren G. Low, MD, FACS
*Thomas C. Howard, MD FACS
*David H. Holden, MD
Brock E. Schnebel, MD

DEPARTMENT OF ARTHRITIS
John A. Blaschke, MD
Mary L. Duffy Honick, MD
*Richard J. Hess, MD, FACP
*Jon W. Blaschke, MD
*R. Eugene Arthur, MD
*Larry G. Willis, MD

DEPARTMENT OF OCCUPATIONAL and INDUSTRIAL MEDICINE
Jack W. Parrish, MD, FAAFP
Robert R. Dugan, MD

*Specialty Board Diplomate

MANAGEMENT SERVICES
James A. Hyde, Administrator

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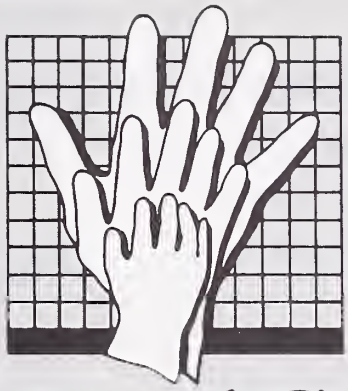

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■ **This year's A.H. Robins Award for Community** Service goes to Charles E. Green, MD, a Lawton pediatrician. In addition to his professional activities, Dr Green has served as chairman of the Lawton Library Board, president of the Lawton Rotary Club, and president of the Board of Directors of the Center for Creative Living at Cameron University. He is also a member of the Oklahoma Coaches Association Hall of Fame. The Robins award winner is named each year by the Board of Trustees of the Oklahoma State Medical Association (OSMA). The award will be presented to Dr Green at the board's August meeting.

■ **OSMA Executive Director David Bickham** has been named this year's recipient of the Donald J. Blair Friend of Medicine Award. The award is presented annually by the OSMA Board of Trustees to the lay person who has done the most to further medicine in his or her community or state. Mr Bickham joined the OSMA twenty years ago and for the last ten years has served as executive director. The award is named in memory of Donald J. Blair, OSMA executive director in the 1970s, and will be presented at the August meeting of the OSMA board.

■ **The Oklahoma Department of Human Services** has a new program to assist eligible deaf, hearing impaired, speech impaired, or deaf-blind individuals. The Telecommunications for the Hearing Impaired Program makes available to these individuals special equipment that gives them access to the telephone system. Additional information, flyers, and applications for the program will be provided upon request. Write ODHS, Services for the Deaf and Hearing Impaired, PO Box 25352, Oklahoma City, OK 73125, or call (405) 424-4311, ext. 2800 or the TDD-equipped (405) 424-2794.

■ **The Fourth G. Rainey Williams Surgical Symposium** will be held Thursday through Saturday, September 21-23, 1989, at the University of Oklahoma Health Sciences Center in Oklahoma City. This year's symposium will focus on the review of current concepts in gastrointestinal surgery, surgical oncology, trauma, and vascular surgery. For information or registration, contact Larry R. Pennington, MD, Department of Surgery, PO Box 26307, Oklahoma City, OK 73126, (405) 271-5781.

■ **William N. Harsha, MD, JD, Oklahoma City,** was recently appointed to the Board of Directors of the American Academy of Pain Management. Dr Harsha has represented the United States at a number of world pain congresses and served as a visiting lecturer in more than half a dozen countries.

■ **The Oklahoma Occupational Medicine Association** will sponsor its Fourteenth Annual Fall Education Meeting, Current Concepts in Occupational Medicine, Friday and Saturday, November 10 and 11, 1989. The meeting will be in Tulsa this year. For information, contact William R. Gillock, Hillcrest Occupational Medicine Clinic, 1541 North Sheridan Road, Tulsa, OK 74115, (918) 836-5406.

■ **R.W. Neal, MD, Tulsa, has been named to the** Board of Governors of the American College of Cardiology (ACC). As an ACC governor, Dr Neal serves as the focal point for the college's activities related to the maintenance and improvement of quality cardiovascular care in Oklahoma. The ACC has a membership of over 17,000 cardiovascular specialists in the United States.

■ **Two different honors have recently been** bestowed on Patrick A. McKee, MD, chairman of the Department of Medicine at the University of Oklahoma Health Sciences Center in Oklahoma City. He was named George Lynn Cross Research Professor of Medicine, the highest professorship award given by the university. He also received the Physician of the Year — Academic Medicine Award from the OU College of Medicine Alumni Association.

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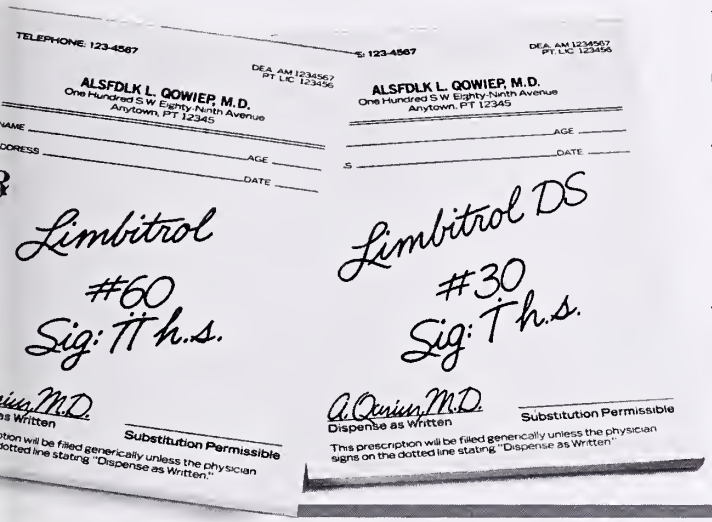

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utions: Use cautiously in patients with a history of seizures, in hyperthyroid patients, on thyroid medication, patients with impaired renal or hepatic function. Because of suicidal on in depressed patients, do not permit easy access to large quantities of drug. Periodic liver on tests and blood counts recommended during prolonged treatment. Amitriptyline may action of guanethidine or similar antihypertensives. When tricyclic antidepressants are oncomitantly with cimetidine (Tagamet), clinically significant effects have been reported ing delayed elimination and increasing steady-state concentrations of the tricyclic drugs. Limbitrol with other psychotropic drugs has not been evaluated; sedative effects may be ve. Discontinue several days before surgery. Limit concomitant administration of ECT to ial treatment. See Warnings for precautions about pregnancy. Should not be taken during ursing period or by children under 12. In elderly and debilitated, limit to smallest effective e to preclude ataxia, oversedation, confusion or anticholinergic effects. Inform patients to lt physician before increasing dose or abruptly discontinuing this drug.

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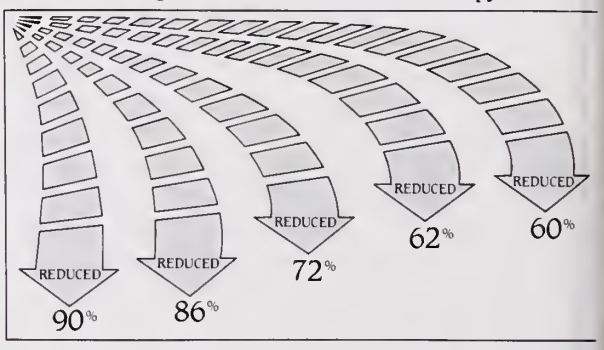

*Patients often presented with more than one somatic symptom

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AUGUST 1989

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In the 1986 USDA Continuing Survey of Food Intakes by Individuals[1], women of child-bearing years reported a mean intake of 1588 calories a day. Since the American diet averages about 6-7 mg of iron per 1000 calories, it's not surprising that the same survey found that most of these women are getting about 60 percent of their RDA for iron.

Yet consider, one three-ounce serving of lean sirloin contains 2.8 mg of iron, about forty to sixty percent of which is heme iron, the most bioavailable form. In addition, the presence of beef or other meats in a meal increases the bioavailability of nonheme iron from foods such as vegetables and grains.

Importantly, lean beef can also meet fat and cholesterol guidelines of most leading heart and health authorities. The how-to's are good advice for almost anyone.

Start with "The Skinniest Six" shown below. None is more than 180 calories per three-ounce cooked, trimmed serving. All are easy to specify at the meat counter.

These six cuts also simplify portion control. Four ounces uncooked equals about three ounces cooked. Grilling, broiling and roasting add no extra fat in cooking. And the taste of beef makes it easy to dispense with fat-laden sauces.

Carefully chosen, prepared and served, "The Skinniest Six" provide an impressive list of essential nutrients for under 180 calories per three-ounce serving.

And as part of a specific plan to increase dietary iron, in a balanced diet beef can be one of the best-tasting recommendations you'll ever make.

BEEF

*"The Skinniest Six"**

Eye of Round
1.65 mg iron
155 calories
5.5 g total fat
(2.1 g saturated fat)
59 mg cholesterol

Round Tip
2.50 mg iron
162 calories
6.4 g total fat
(2.3 g saturated fat)
69 mg cholesterol

Top Loin
2.10 mg iron
172 calories
7.6 g total fat
(3.0 g saturated fat)
65 mg cholesterol

Top Round
2.45 mg iron
162 calories
5.3 g total fat
(1.8 g saturated fat)
72 mg cholesterol

Sirloin
2.85 mg iron
177 calories
7.4 g total fat
(3.0 g saturated fat)
76 mg cholesterol

Tenderloin
3.05 mg iron
174 calories
7.9 g total fat
(3.1 g saturated fat)
72 mg cholesterol

Uncooked whole cuts are shown for purpose of identification.

Composite of cooked retail cuts of beef*	
Protein	25.9 g
Iron	2.7 mg
Zinc	6.0 mg
Vitamin B-12	2.28 mcg
Thiamin	.08 mg
Niacin	3.6 mg
Sodium	55 mg
Total Fat	8.7 g
(Saturated Fat)	(3.4 g)
Cholesterol	76 mg
Calories	189

[1] United States Department of Agriculture, "Nationwide Food Consumption Survey, Continuing Survey of Food Intakes by Individuals. (NFCS, CSFII)" Report No. 86-1. *Nutrients in 3 oz. trimmed and cooked: USDA Handbook 8-13, Rev 1986.

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OKLAHOMA STATE MEDICAL ASSOCIATION

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Axid is indicated for maintenance therapy for duodenal ulcer patients at a reduced dosage of 150 mg h.s. after healing of an active duodenal ulcer. The consequences of continuous therapy with Axid for longer than one year are not known.

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2. Because nizatidine is excreted primarily by the kidney, dosage should be reduced in patients with moderate to severe renal insufficiency.

3. Pharmacokinetic studies in patients with hepatorenal syndrome have not been done. Part of the dose of nizatidine is metabolized in the liver. In patients with normal renal function and uncomplicated hepatic dysfunction, the disposition of nizatidine is similar to that in normal subjects.

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Drug Interactions – No interactions have been observed between Axid and theophylline, chlordiazepoxide, lorazepam, lidocaine, phenytoin, and warfarin. Axid does not inhibit the cytochrome P-450-linked drug-metabolizing enzyme system; therefore, drug interactions mediated by inhibition of hepatic metabolism are not expected to occur. In patients given very high doses (3,900 mg) of aspirin daily, increases in serum salicylate levels were seen when nizatidine, 150 mg b.i.d., was administered concurrently.

Carcinogenesis, Mutagenesis, Impairment of Fertility – A two-year oral carcinogenicity study in rats with doses as high as 500 mg/kg/day (about 80 times the recommended daily therapeutic dose) showed no evidence of a carcinogenic effect. There was a dose-related increase in the density of enterochromaffin-like (ECL) cells in the gastric oxyntic mucosa. In a two-year study in mice, there was no evidence of a carcinogenic effect in male mice, although hyperplastic nodules of the liver were increased in the high-dose males as compared with placebo. Female mice given the high dose of Axid (2,000 mg/kg/day, about 330 times the human dose) showed marginally statistically significant increases in hepatic carcinoma and hepatic nodular hyperplasia with no numerical increase seen in any of the other dose groups. The rate of hepatic carcinoma in the high-dose animals was within the historical control limits seen for the strain of mice used. The female mice were given a dose larger than the maximum tolerated dose, as indicated by excessive (30%) weight decrement as compared with concurrent controls and evidence of mild liver injury (transaminase elevations). The occurrence of a marginal finding at high dose only in animals given an excessive and somewhat hepatotoxic dose, with no evidence of a carcinogenic effect in rats, male mice, and female mice (given up to 360 mg/kg/day, about 60 times the human dose), and a negative mutagenicity battery are not considered evidence of a carcinogenic potential for Axid.

Axid was not mutagenic in a battery of tests performed to evaluate its potential genetic toxicity, including bacterial mutation tests, unscheduled DNA synthesis, sister chromatid exchange, mouse lymphoma assay, chromosome aberration tests, and a micronucleus test.

In a two-generation, perinatal and postnatal fertility study in rats, doses of nizatidine up to 650 mg/kg/day produced no adverse effects on the reproductive performance of parental animals or their progeny.

Pregnancy – Teratogenic Effects – Pregnancy Category C – Oral reproduction studies in rats at doses up to 300 times the human dose and in Dutch Belted rabbits at doses up to 55 times the human dose revealed no evidence of impaired fertility or teratogenic effect, but, at a dose equivalent to 300 times the human dose, treated rabbits had abortions, decreased number of live fetuses, and depressed fetal weights. On intravenous administration to pregnant New Zealand White rabbits, nizatidine at 20 mg/kg produced cardiac enlargement, coarctation of the aortic arch, and cutaneous edema in one fetus and at 50 mg/kg it produced ventricular anomaly, distended abdomen, spina bifida, hydrocephaly and enlarged heart in one fetus. There are, however, no adequate and well-controlled studies in pregnant women. It is also not known whether nizatidine can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. Nizatidine should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers – Studies conducted in lactating women have shown that < 0.1% of the administered oral dose of nizatidine is secreted in human milk in proportion to plasma concentrations. Caution should be exercised when administering nizatidine to a nursing mother.

Pediatric Use – Safety and effectiveness in children have not been established.

Use in Elderly Patients – Ulcer healing rates in elderly patients are similar to those in younger age groups. The incidence rates of adverse events and laboratory test abnormalities are also similar to those seen in other age groups. Age alone may not be an important factor in the disposition of nizatidine. Elderly patients may have reduced renal function.

Adverse Reactions: Clinical trials of nizatidine included almost 5,000 patients given nizatidine in studies of varying durations. Domestic placebo-controlled trials included over 1,900 patients given nizatidine and over 1,300 given placebo. Among reported adverse events in the domestic placebo-controlled trials, sweating (1% vs 0.2%), urticaria (0.5% vs < 0.01%), and somnolence (2.4% vs 1.3%) were significantly more common in the nizatidine group. A variety of less common events was also reported; it was not possible to determine whether these were caused by nizatidine.

Hepatic – Hepatocellular injury, evidenced by elevated liver enzyme tests (SGOT [AST], SGPT [ALT], or alkaline phosphatase), occurred in some patients and was possibly or probably related to nizatidine. In some cases, there was marked elevation of SGOT, SGPT enzymes (greater than 500 IU/L) and, in a single instance, SGPT was greater than 2,000 IU/L. The overall rate of occurrences of elevated liver enzymes and elevations to three times the upper limit of normal, however, did not significantly differ from the rate of liver enzyme abnormalities in placebo-treated patients. All abnormalities were reversible after discontinuation of Axid.

Cardiovascular – In clinical pharmacology studies, short episodes of asymptomatic ventricular tachycardia occurred in two individuals administered Axid and in three untreated subjects.

CNS – Rare cases of reversible mental confusion have been reported.

Endocrine – Clinical pharmacology studies and controlled clinical trials showed no evidence of antiandrogenic activity due to Axid. Impotence and decreased libido were reported with equal frequency by patients who received Axid and by those given placebo. Rare reports of gynecomastia occurred.

Hematologic – Fatal thrombocytopenia was reported in a patient who was treated with Axid and another H_2-receptor antagonist. On previous occasions, this patient had experienced thrombocytopenia while taking other drugs. Rare cases of thrombocytopenic purpura have been reported.

Integumental – Sweating and urticaria were reported significantly more frequently in nizatidine- than in placebo-treated patients. Rash and exfoliative dermatitis were also reported.

Hypersensitivity – As with other H_2-receptor antagonists, rare cases of anaphylaxis following administration of nizatidine have been reported. Because cross-sensitivity in this class of compounds has been observed, H_2-receptor antagonists should not be administered to individuals with a history of previous hypersensitivity to these agents. Rare episodes of hypersensitivity reactions (eg, bronchospasm, laryngeal edema, rash, and eosinophilia) have been reported.

Other – Hyperuricemia unassociated with gout or nephrolithiasis was reported. Eosinophilia, fever, and nausea related to nizatidine administration have been reported.

Overdosage: Overdoses of Axid have been reported rarely. The following is provided to serve as a guide should such an overdose be encountered.

Signs and Symptoms – There is little clinical experience with overdosage of Axid in humans. Test animals that received large doses of nizatidine have exhibited cholinergic-type effects, including lacrimation, salivation, emesis, miosis, and diarrhea. Single oral doses of 800 mg/kg in dogs and of 1,200 mg/kg in monkeys were not lethal. Intravenous median lethal doses in the rat and mouse were 301 mg/kg and 232 mg/kg respectively.

Treatment – To obtain up-to-date information about the treatment of overdose, a good resource is your certified regional Poison Control Center. Telephone numbers of certified poison control centers are listed in the *Physicians' Desk Reference (PDR)*. In managing overdosage, consider the possibility of multiple drug overdoses, interaction among drugs, and unusual drug kinetics in your patient.

If overdosage occurs, use of activated charcoal, emesis, or lavage should be considered along with clinical monitoring and supportive therapy. Renal dialysis for four to six hours increased plasma clearance.

PV 2096 AMP [013089]

Additional information available to the profession on request.

O Death, Where Is Thy Dignity?

American pundits are ever more advancing the wish to be able to die a "dignified death" in America. A dignified death, they say, should be a just reparation for the inevitability of biologic eclipse. Some of this disquiet results from medicine's high-tech prolongation of terminal illness, but it also seems likely that Hollywood's use of the movie death scene to further the dramatic plot has subliminally inserted into the national psyche an unrealistic notion of the true nature of dying and death.

Despite the impression created in our culture by these drama writers, death is never dignified. Death is the antithesis of dignity. As *joy* is the antithesis of *sorrow,* so is *death* the opposite of *dignity.* Even though it is the inevitable denouement of all biological life, death remains the ultimate humbler: the messy, slack-jawed, purplish, crumpled-in-a-heap, opposite of proud, confident, upright, functional life.

Those savants who would have us "die with dignity," and who advocate a style of medical care toward that end, may be trying to be empathetic, but they are seeking a mirage. The death itself will never be dignified. The higher goal, rather, is to seek to *live* in dignity and self-respect, even when approaching an imminent death. We sentient humans will strive for a style of living that includes dignity, and mutual respect, and self-determination. When the decline of a terminal illness is present, then we can try to help our patients and our fellow human beings still to be dignified and esteemed, even during their last hours of life. If we deceive ourselves that the death itself will be dignified, we may lose the opportunity to make the last living events significant.

The people that we physicians serve expect us to fight the good fight against their illnesses, but they also are dependent on us to have a positive effect on the quality of the time they experience during the declining phase of their terminal illness. As a part of our duties to patients, we can assume the responsibility to conduct their medical care in a manner compatible with their pre-morbid philosophy of life. We can have the interest needed to understand their philosophy of living, and the anticipated emotional needs of their dying time. The existence and content of any "living will" or other legal directive should be known to the physician during a terminal illness, and should guide the medical decisions.

Although family support is crucial in the management of terminal illness, in many instances, the physician is a better "executor" of the patient's spiritual estate than is the patient's own family. All too often, the dependencies and the emotional conflicts of family life may disturb the family caretaking process so that the patient's terminal care wishes are avoided or changed. Especially, a patient's expressed desire to be disconnected from life-support machinery, or extraordinary fluid injections are — with unseemly frequency — ignored and countermanded by family members who have not yet emotionally accepted the inevitability of the imminent death.

Family members may be too involved emotionally to follow objectively the "living will" instructions. State statutes should protect the integrity of a proper "living will." The physician should cultivate the emotional equanimity needed to follow the expressed desires of the terminally ill patient.

Ray V. McIntyre, M.D.

Town vs Town

It is unfortunate and a loss of potentially valuable resources to have controversy between the academic and the clinical communities. However, this type of friction has existed to some degree for years.

After a period of "simmering down" and increasing cooperation between the full-time faculty of our medical schools and the practicing physicians during the sixties and seventies, we are seeing evidence now of a major war developing. The major factor that has fed this new flare-up has been concern about competition.

Medical schools have always offered outpatient and primary-care services, but it has always been thought that the majority of the patient work in the university settings would be concentrated in tertiary and specialized care. Also, the care has traditionally been aimed at indigent care primarily with private referrals from "outlying" practicing physicians.

With the rapid changes in physician reimbursement and financing of medical care, we are seeing medical school facilities devoted exclusively to outpatient care springing up all over the country and competing more vigorously with private practitioners. It has been said, "you can't educate the teachers of tomorrow in the environment of yesterday." There has been a major shift of teaching and experience need to the outpatient setting, especially in the primary care disciplines. Residents in training have to have more experience in the outpatient setting.

The other driving force in this controversial area is the increasingly tight state funding of medical schools, especially in Oklahoma. Last year the state provided only 20.3% of the entire $83 million budget for OU/HSC, whereas 43.2% was derived from the private practice plan (PPP). Grants and contracts are decreasing also and accounted for only 15.5% of the funding. In 1986-87 the average state support for state medical schools was $47,000 per medical student. Support in Oklahoma was $22,929 per student (Alabama = $84,794, Arizona = $100,000, New Mexico = $66,725, Vermont = $17,000).

Many schools are now hiring adjunct faculty members to work in the faculty practice plans only. From 1976 to the present, the number of clinical faculty members has risen from 28,602 to nearly 50,000 and virtually all of the 127 medical schools nationwide have some sort of faculty practice plans in place.

We must recognize the need of medical school faculties for a private practice plan and the need for that added income to support the school and maintain an adequate faculty. However, the mission of the medical school must not be forgotten. As was pointed out in a recent address delivered by Dr Ed Brandt, our new executive dean at OU, at the 1987 meeting of the Association of American Medical Colleges and printed in *The Pharos*, "the unique role of the medical school is only to award the MD degree. The determination of admission standards, curriculum, and graduation criteria for medical students is the unique role of the medical schools and therefore should be their highest priority." The accomplishment of this goal, however, is becoming much more complicated because of the financial factors that cannot be ignored. Dr Brandt suggests some approaches to potential solutions in his presentation.

Practicing physicians are generally not against competition but do take issue with competition that appears to be one-sided and from competitors that appear to be receiving unfair state subsidies. The use of state-supported land, buildings, equipment, and staff in providing this care when others outside the faculty are totally excluded seems to many to be unfair. It appears to be an "uneven playing field."

It is critical, in my judgment, that the playing field be evened up a little and the rules for playing be made even and consistent. If the state employees and retired teachers PPO plan were offered to all physicians and hospitals in the state with the same rules and reimbursement guidelines applying to each, opposition would significantly decrease. The school or faculty did not draw up the rules but does have a significant influence on those who do establish the rules of the plan.

Ultimately, there must be some sort of compromise. There must be cooperation between full-time faculty and private practitioners and clinical faculty members to maintain a first-rate medical school and residency training program. We must keep our lines of communication open and each be aware of and concerned about the problems of the other. To help accomplish this, we have established a liaison committee of OU medical school and OSMA representatives to address problems related to both, such as the state PPO, declining numbers of medical school applicants, state funding of medical education, and encouragement of medical students to enter primary care areas.

With the high quality leadership at the medical school, I feel certain that appropriate decisions and compromises will occur. As Dr Brandt concludes in his address, "the real point is that now is the time to change and to achieve our primary mission." By working together, we will be able to achieve that mission more easily and hopefully for the benefit of the whole profession.

5-Fluorouracil–Induced Angina

Michael Spain, MD, and Debra McPherson, PharmD

5-Fluorouracil–induced cardiac ischemia is rare and poorly understood. We present the second known case of catheterization data and provide new information regarding possible mechanisms.

Chest pain characteristic of ischemia in association with 5-fluorouracil (5-FU) has been reported in 15 patients.[1-9] Although this observation has now been made on numerous occasions, little information is available regarding possible mechanisms of this phenomenon. We present a case illustrating the clinical manifestations of 5-FU–induced angina and review the current literature. Discussion is focused on possible etiologies.

Case Report

A 74-year-old white woman with recurrent adenocarcinoma of the rectosigmoid colon metastatic to liver, peritoneum, colon, and pelvis was begun on a monthly cycle of 5-FU given intravenously over five days. She had previously received irradiation to the pelvis but had no history of myocardial radiation exposure. She had no history of ischemic heart disease or hypertension. Over a period of six cycles of chemotherapy, she repeatedly experienced severe angina during the fourth and fifth day of treatment. This pain was associated with lateral ST elevation (Fig 1), which would resolve with aggressive medical therapy including intravenous nitroglycerin. Cardiac isoenzymes were normal on each occasion and a 2-D echocardiogram revealed normal left ventricular function.

Pretreatment with large doses of nitrates (nitropaste, 3 inches every 6 hours) and calcium channel blockers (nifedipine, 60 mg every 6 hours) was unsuccessful in preventing the angina. During the first three cycles, the patient also had been on warfarin therapy for a documented deep venous thrombosis, which was subsequently discontinued with no change in the occurrence or nature of the angina.

After the fifth cycle, the patient underwent cardiac catheterization, which revealed normal left ventricular function. She had essentially normal coronary arteries with mild luminal irregularities seen in the left anterior descending artery, right coronary artery, and first obtuse marginal branch of the left circumflex artery.

Prior to her sixth cycle, screening was done for the presence of platelet aggregation. This qualitative screening was done by microscopic examination of platelet-rich plasma separated by centrifugation and prepared with Wright's stain. This methodology was standardized in a canine model previously reported by our group.[10] A second blood sample was obtained in a similar fashion after the onset of angina on day five; comparison with the first sample revealed large clumps of platelet and platelet/white blood cell aggregates. A platelet count was obtained; it was within normal limits and unchanged from the baseline.

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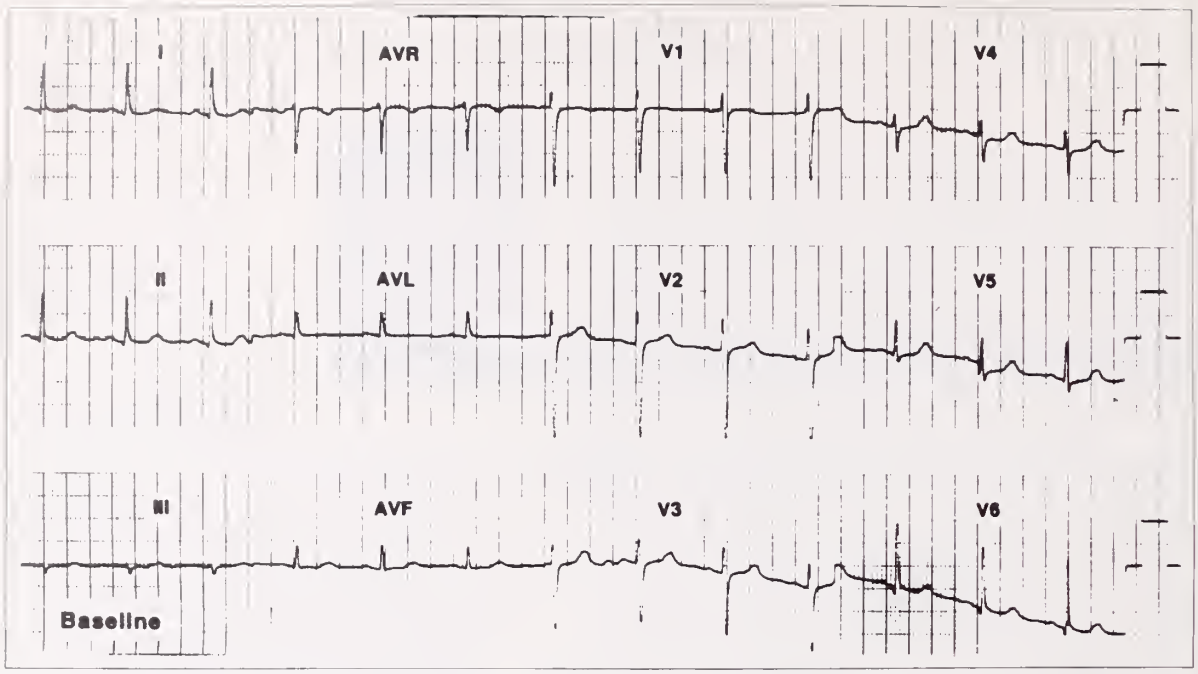

Figure 1A. Electrocardiogram at baseline (above) and during chest pain (Fig. 1B). Lateral ST elevation and anterior T-wave inversion resolved after intravenous nitroglycerin alleviated the chest pain.

The attending oncologist found evidence of tumor growth, the patient's 5-FU therapy was discontinued due to lack of efficacy and the aforementioned side effects. She has continued on another chemotherapy protocol without antianginal medications with no recurrence of chest pain.

Discussion

While 15 cases of 5-FU–induced angina have been reported in the literature,[1-9] controversy persists regarding the mechanism. Roth first reported on the accumulation of C-14 labeled 5-fluorouracil in the myocardium of experimental animals, suggesting a possible direct toxicity to myocardial cells.[2] Stevenson suggested a cytotoxic, autoimmune mechanism exacerbated by lymphokine release and described a potential benefit from pretreatment with corticosteroids.[3] Pottage described 5 patients with chest pain out of 140 patients given 5-FU, resulting in data suggesting the possible incidence.[4] Of interest, all four patients had received myocardial radiation prior to chemotherapy, raising the question of radiation-induced damage to the epicardial coronary circulation. Pottage concluded that the chemotherapy-associated chest pain was ischemic in nature and that coronary spasm could be a contributing factor. Soukop identified 2 of 150 patients with 5-FU–associated chest pain, neither of whom had received previous myocardial radiation.[6] Subsequent case reports contributed other potential mechanisms including pulmonary hypertension caused by pulmonary artery spasm, changes in platelets resulting in increased aggregability, and interference with high-energy, phosphate generation by a metabolite of 5-FU.[7-9]

Marked EKG abnormalities consistent with ischemia were seen in nearly all reported cases during chest pain. Most patients responded quickly to nitrates, with subsequent resolution of the chest pains. Myocardial infarction and death has been seen in one-fourth of those cases reported.[1,4,6,7] One 65-year-old man with a history of a previous myocardial infarction and ventricular aneurysm experienced sudden death during treatment with 5-FU, while a 65-year-old woman died secondary to cardiogenic shock.[1,6]

We report only the second case with catheterization data collected near the event, and both patients had essentially normal coronary arteries. This helps clarify the etiology of this disorder. Primary cellular damage from cytotoxic or autoimmune mechanisms appear unlikely as they have not consistently caused reversible chest pain with associated EKG changes. No patient has been found to have any element of cardiomyopathy, which is a more classic clinical presentation for toxic effects. One patient with hemodynamic monitoring during chest pain had no significant degree of pulmonary hypertension, efffectively excluding pulmonary artery spasm. It is now clear that myocardial radiation is not a prerequisite

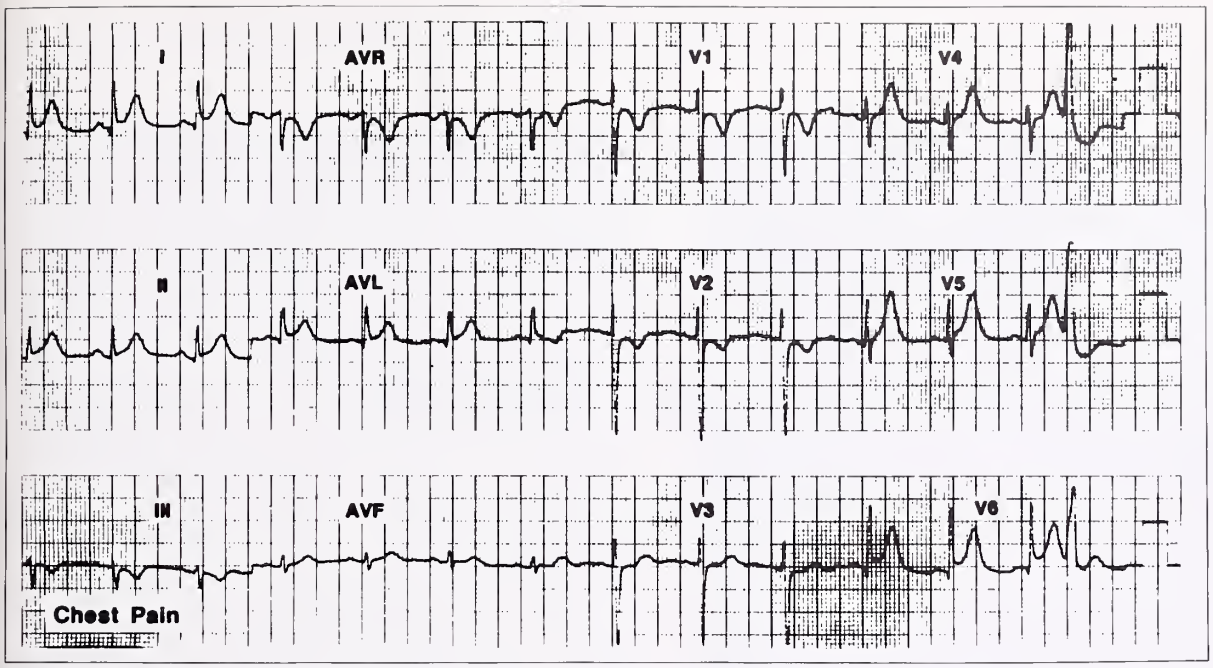

Figure 1B

for this clinical event, although radiation-induced coronary stenoses could render the myocardium more vulnerable to the effects of coronary vasospasm, if it occurred in the area of a lesion. Our patient did not respond to extremely large pretreatment doses of nitrates and calcium channel blockers, although she did benefit from intravenous nitroglycerin once the pain began. Furthermore, the time frame of chest pain always occurring after four or five days of therapy suggests other etiologies, as coronary vasospasm is not viewed as an acquired abnormality over time. Thus, while we cannot exclude vasospasm as a contributing factor, it is difficult to consider this the sole etiology.

We believe that the development of platelet and platelet/white blood cell aggregates demonstrated by this patient after receiving 5-FU may be of clinical significance. Platelet aggregation has been shown to precipitate unstable angina in patients with coronary artery disease,[11,12] although it is unclear if similar effects are seen in people with normal or near-normal coronary arteries. Platelet aggregation and local vasospasm may work in concert to alter coronary flow, which can result in ischemia. Our current methodology did not allow quantitation of the platelet aggregates. Because the patient was removed from 5-FU therapy due to tumor recurrence, no formal testing of antiplatelet drugs or disaggregating therapy could be performed during subsequent cycles.

Conclusion

In summary, we believe that 5-FU–induced angina represents a rare but potentially serious adverse effect of a common chemotherapy agent. The most likely factors associated with 5-FU angina appear to be coronary vasospasm and/or platelet aggregation. Pretreatment for these factors in a controlled fashion may further clarify the issue.

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Survival Data on Breast Cancer Patients Accepted for Radiotherapy, 1966-1977

V.M. Lockard, MD; F.C. Wallingford, MD; P.S. Hart, RT

The survival data presented here include the stage of breast cancer, location of the primary cancer in the breast, type of surgery, and dose and location of radiotherapy.

In 1983 we decided to review our five-year survival rates on patients treated for breast cancer during the twelve-year period between January 1, 1966, and December 31, 1977. We completed this study during the sumer of 1984 and presented it to those individuals attending our Tumor Conference at the Jane Phillips Episcopal–Memorial Medical Center, Bartlesville, Okla.

One of the things we learned from that survey was that the survival rate following a modified radical mastectomy was lower than that when a standard radical mastectomy was performed. The number of modified radical mastectomies, however, was only about 10% of the number of standard radical mastectomies, so we felt that the statistical significance had to be held in some question. Nonetheless, we have become interested in seeing if others are having similar findings in their data.

In that connection it has been of interest to note that the National Cancer Institute, in recent years, has released data showing that the mortality rate from breast cancer in women over 50 years of age has been slowly increasing since 1979 and that the mortality rate for women under 50 years of age has increased during 1984 and 1985 (the last year for which data is available).[1] This increased mortality rate is occurring during a period when there is a

Table 1. Definition of Stages

Stage I:	Lesion limited to the breast. It does not involve the skin or the deep fascia.
Stage IIA:	Stage I, plus involvement of 1 to 3 axillary nodes.
Stage IIB:	Stage I, plus involvement of 4 or more axillary nodes.
Stage III:	Breast lesion with involvement of skin or deep fascia.
Stage IV:	Breast lesion with distant metastases.

Table 2. Absolute Survival Rates of the Various Stages

	No. Cases	5 yr Survivors	Expired	Unknown	Absolute Survival Rate
Total Cases	340	207	99	34	61%
Stage I	130	101	16	13	78%
Central-Medial	97	78	9	10	80%
Lateral	31	22	7	2	71%
Unknown	2	1		1	50%
Stage IIA	72	47	15	10	65%
Stage IIB	78	34	35	9	44%
Stage III	31	11	20	0	31%
Stage IV	28	14	13	1	50%

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Table 3. Survival Data, Stage I — 130 Cases

	No. Cases	5 yr Survivors	Expired	Unknown	Absolute Survival Rate
Surgery					
Modified	10	4	5	1	40%
Radical	120	97	11	11	81%
Radiation					
4000r HS					
Modified	1	1	0	0	100%
Radical	19	13	4	2	68%
5000r HS					
Modified	9	3	5	1	33%
Radical	90	73	7	10	81%
5000 HS + Tangential					
Radical	7	7	0	0	100%
Tumor Location — Modified					
Cen-med	5	2	2	1	40%
Lateral	5	2	3	0	40%
Tumor Location — Radical					
Cen-med	91	76	7	8	84%
Lateral	26	20	4	2	77%

greater use of mammography for early detection of breast cancer, during a period when there is significantly greater use of chemotherapy to slow the recurrence rate and hopefully increase the survival rate of breast cancer, and during a period when breast surgery generally is done by better trained surgeons.

It seems likely that there is going to be a sizable debate in the medical literature about the cause of this rising breast mortality rate, and in anticipation of that debate we are presenting the results of our survey.

This report presents data on 340 patients treated for breast cancer during the 12-year period January 1966 through December 1977 (Tables 1-7). All patients were treated with Co 60 photons. The source-to-skin distance was 80 cm. The initials *HS* refer to a "hockey stick"–shaped field, in an anterior position, treating the paraclavicular and internal mammary lymph nodes (Fig 1A). The dose in such fields is measured at a depth of 3 cm. Tangential fields are opposed angled fields treating the remainder of the anterolateral chest wall and are designed to include the scar (Fig 1B). The dose in these fields is measured at the skin midpoint between the opposing beams, 80 cm from the source.

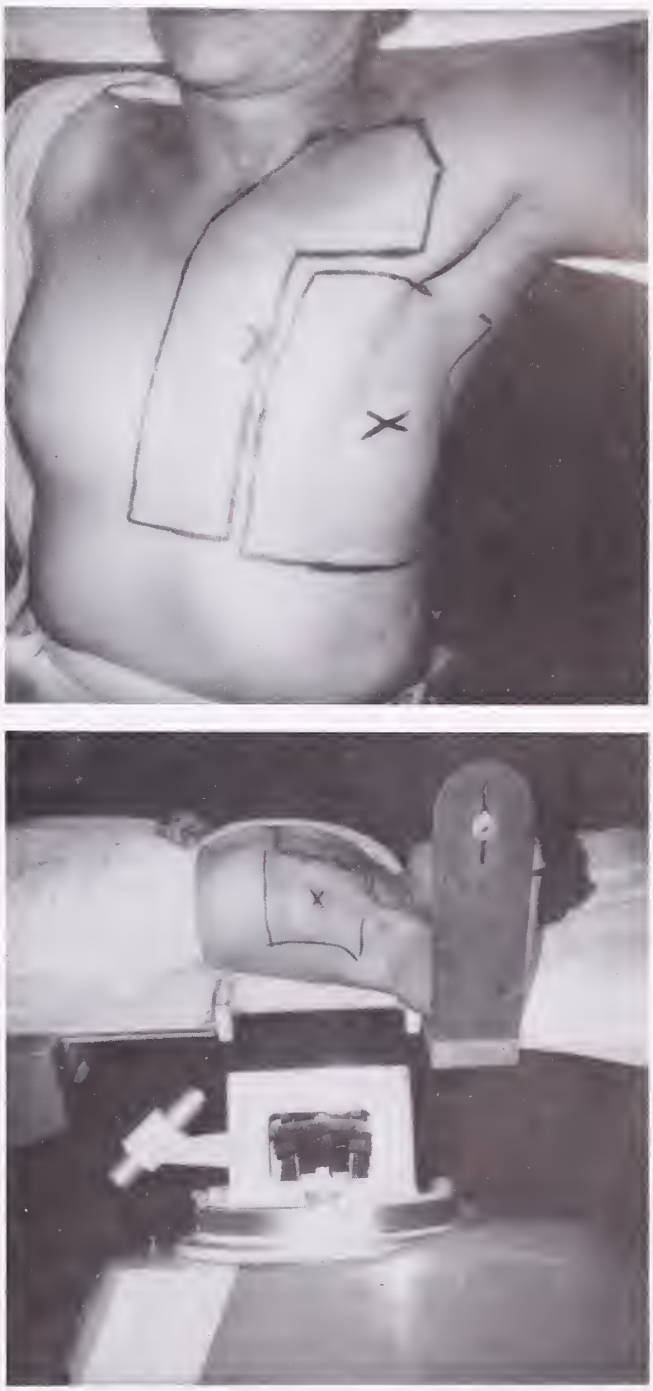

Figure 1A and 1B. Fields marked for radiotherapy treatment of the paraclavicular and internal mammary lymph nodes (hockey stick–shaped field) and remainder of the anterolateral chest wall.

The term *central-medial* includes primary lesions that involve the 12 o'clock-6 o'clock line and that area directly posterior to the nipple and the areola,

Table 4. Stage IIA — 72 Cases

	No. Cases	5 yr Survivors	Expired	Unknown	Absolute Survival Rate
Surgery					
Modified	7	2	4	1	29%
Radical	65	45	11	9	69%
Radiation					
4000 HS					
Modified	1	0	1	0	0%
Radical	7	6	1	0	86%
5000 HS					
Modified	5	2	2	1	40%
Radical	57	36	11	3	63%
5000 HS + Tangential					
Modified	1	0	1	0	0%
Radical	4	4	0	0	100%
Tumor Location — Modified					
Cen-med	5	1	3	1	20%
Lateral	2	1	1	0	50%
Tumor Location — Radical					
Cen-med	31	18	8	5	58%
Lateral	32	25	3	4	78%
Unknown	2	1	1	0	50%

Table 5. Stage IIB — 78 Cases

	No. Cases	5 yr Survivors	Expired	Unknown	Absolute Survival Rate
Surgery					
Modified	8	3	5	0	38%
Radical	68	30	29	9	44%
Lumpectomy	1	0	1	0	0%
No surgery	1	1	0	0	100%
Radiation					
4000 HS					
Radical	10	4	5	1	40%
5000 HS					
Modified	5	1	4	0	20%
Radical	31	15	11	5	48%
5000 HS + Tangential					
Modified	3	2	1	0	67%
Radical	14	4	8	2	28%
No surgery	1	1	0	0	100%
Tumor Location — Modified					
Cen-med	2	1	1	0	50%
Lateral	6	1	5	0	16%
Tumor Location — Radical					
Cen-med	38	18	18	2	47%
Lateral	29	11	11	7	38%
Diffuse	1	0	1	0	0%

Table 6. Stage III — 31 Cases

	No. Cases	5 yr Survivors	Expired	Unknown	Absolute Survival Rate
Surgery					
Modified	7	1	6	0	14%
Radical	20	10	10	0	50%
No surgery	4	0	4	0	0%
Radiation					
4000 HS					
Modified	2	0	2	0	0%
Radical	2	0	2	0	0%
5000 HS					
Modified	2	1	0	1	50%
Radical	10	7	3	0	70%
5000 HS + Tangential					
Modified	3	0	3	0	0%
Radical	8	3	5	0	38%
Tumor Location — Modified					
Cen-med	6	1	5	0	16%
Lateral	1	0	1	0	0%
Tumor Location — Radical					
Cen-med	15	7	8	0	47%
Lateral	5	3	2	0	60%
Tumor Location — No Surgery					
Cen-med	2	0	2	0	0%
Lateral	2	0	2	0	0%

Table 7. Stage IV — 28 Cases

	No. Cases	5 yr Survivors	Expired	Unknown	Absolute Survival Rate
Surgery					
Simple	21	12	8	1	57%
5000 HS	11	8	2	1	73%
5000 HS + Tang.	8	4	3	1	50%
4400 HS + Tang.	1	0	1	0	0%
4000 HS	1	0	1	0	0%
Surgery — Lumpectomy					
5000-Using 1 to 4 Portals	4	2	2	0	50%
Radiation					
2300-5000 R HS + Tangential	3	0	3	0	0%

as well as the medial portion of the breast. The term *lateral,* of course, refers to the remainder of the breast.

While we did treat some stage I lateral lesions, our general policy was to not treat small, well differentiated lateral lesions.

Tables 3 through 7 show some survival data considering type of surgery, dose and area of radiotherapy, and location of tumor in the four stages.

Observations

We started this project in an effort to learn how our survival rates compared with figures in the literature. An American Cancer Society monthly journal, *CA,* discussing survival rates based on information from major treatment centers throughout the nation, states that relative survival rates for the period 1970-73 for breast cancer patients are 68% for whites and 51% for blacks.[2] Given that relative rates are greater than absolute, and given that we did not treat most lateral stage I lesions, we think our results are close to those averages.

The difference in survival rates between those patients treated with modified radical mastectomy and those treated with the standard radical mastectomy was a surprise finding. The small size of the modified radical mastectomy group makes us cautious about drawing any firm conclusions. It is significant enough, however, that we want to see if others are having a similar experience.

We did not have enough information in our records to judge the impact of chemotherapy on these results, and we recognize that this treatment modality likely boosted the survival rates in the latter part of our series. Perhaps we can tell how much by looking at the Jane Phillips Episcopal Memorial Medical Center Tumor Registry Data as time goes by.

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Pamela S. Hart, RT, is a radiographer. She was trained in England and is a member of the American Registry of Technologists.

Coming next month

Manuscripts scheduled for publication next month include a report on 100 needle localizations of nonpalpable mammographic abnormalities, a case study on transitional cell carcinoma associated with retrocaval ureter, and a paper on Oklahoma laws governing the treatment of minors without parental consent.

The Prevalence and Risk of Diabetic Retinopathy Among Indians of Southwest Oklahoma

Steven W. Newell, MD; Bernadine Tolbert, MD, PhD; Joe Bennett, MBA; Teresa L. Parsley, MS

The overall prevalence of diabetic retinopathy was 49.3% among 142 diabetic Indians examined at the Indian Health Service at Clinton, Oklahoma. Univariate analysis suggested a positive relationship between duration of diabetes and prevalence of retinopathy. This Indian diabetic population should be examined yearly for diabetic retinopathy.

Until the 1930s, diabetes mellitus occurred quite infrequently among North American Indians.[1,2] During the last 50 years, however, the diagnosis of diabetes has become progressively more common in most Indian populations.[3] The prevalence of diabetes mellitus is 49.8% among Arizona Pimas over the age of 34 years.[4] In addition to the Pima, there are many other tribes in several states with reported diabetes prevalence rates of 20% or greater among adults (35 years of age or older).[1,3,5]

In 1980 there were 169,297 American Indians residing in Oklahoma.[6] At least five Oklahoma Indian tribes, including the Cherokee,[1] Pawnee,[7] and, presumably, the Shawnee, Seminole, and Creek, have reported prevalence rates of diabetes mellitus of 20% or greater among adults.[1] In Oklahoma in 1974, the prevalence rate of diabetes mellitus was 19.5% among Cheyenne-Arapaho Indians ≥35 years.[1]

Sievers stated that diabetes in full-heritage Indians is almost exclusively the noninsulin-dependent, ketosis-resistant type (NIDDM) with the same manifestations and vascular complications as in non-Indians.[3] The incidence and prevalence of diabetes increase with age in both non-Indian[8,9] and Indian[5,10] populations. Juvenile diabetes seems to be uncommon in Indian tribes. In a study of 305 diabetics from Oklahoma plains tribes, West discovered only one person with onset of diabetes under the age of twenty years.[1] The infrequency of juvenile-onset diabetes in American Indian tribes has been reported by others studying the Choctaw,[11] Pawnee,[7] Navajo and Hopi,[12,13], and Chickasaw[1] tribes.

In studies of various American Indian diabetics including the Pimas,[14,15] Winnebagos and Omahas,[16] and Indians of Arizona, Utah, and Nevada,[17] retinopathy was determined to be common. Conversely, in studies of diabetics in other American Indian tribes, including the Choctaws of Oklahoma[11] and the Coushatta of Alabama,[18] retinopathy was determined to be uncommon; it was rare in the Navajo and Hopi tribes.[12,13] West noted that in those tribes in which the rate of diabetic retinopathy was low, long duration of diabetes was uncommon and systematic observations were limited. He noted that "observations of Indians in eastern and western Oklahoma were considerably less complete, and that more data was needed to confirm the paucity of retinopathy, to measure its degree, and to determine why (and if) susceptibility is low."[1]

The prevalence of diabetic retinopathy in the Cheyenne-Arapaho Indian diabetic population is unknown. Because the prevalence of diabetes mellitus is greater in many Indian populations than in the general population, the Indian population may

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be at greater risk for diabetic retinopathy and the associated risk of vision loss. Accurate data concerning this complication of diabetes would be helpful to the Indian Health Service and other agencies planning future ophthalmologic care for this population. This report describes the prevalence, severity, and risk variables associated with diabetic retinopathy in a group of previously diagnosed diabetic Indian patients seen at the Clinton Indian Hospital facility in Clinton, Oklahoma.

Patients and Procedures

About 8150 Indian persons (predominantly of Cheyenne-Arapaho tribal heritage) are served by the Clinton-area facilities (including Clinton, Concho, and Watonga) of the Indian Health Service. These patients are not under the care of an ophthalmologist, but have access to routine eyeglass examinations by local optometrists in the community and medical care by several physicians assigned to the Indian Health Service. Computerized lists show that approximately 390 patients seen in the clinics of the three facilities from March 1986 (May 1986 for the Concho clinic) through July 1987 were diagnosed as having diabetes mellitus. Diabetic patients currently being followed in the general medical or diabetic clinics at the three facilities were notified of the survey by the six primary care physicians and clinic personnel and were offered an opportunity to participate. Appointments were scheduled at the Clinton Indian Hospital/Clinic facility where the examinations took place between October 1985 and July 1987. Charts of patients in the study were examined to assess whether the eligibility criteria were met (BT). Criteria included a previous diagnosis of diabetes mellitus (by chart review) and a fasting serum glucose of at least 140 mg/dl on at least one occasion.

Participants in the survey were predominantly of Cheyenne and/or Arapaho background (74.0%). Of the 142 patients, 32 reported membership in a tribe other than one of these. The ages of the patients ranged from 27 to 81 years, with a mean age of 55.8 years. The sample was 60.6% female.

Examination consisted of measuring the height, weight, and systolic and diastolic blood pressure (taken once and recorded with the patient seated, usually following a minimum of 10 to 15 minutes of inactivity) utilizing an aneroid sphygmomanometer; visual acuity was tested with and without glasses and through pinhole (tested with a Snellen chart placed 20 feet from the patient and adequately lighted by overhead fluorescent light). In addition, patients underwent intraocular pressure measurement using Schiotz tonometry, slit-lamp examination for anterior chamber depth, and pupil dilation, followed by interviewing and the recording of a detailed medical history using a standard questionnaire (Klein, WESDR II), which was only slightly modified for this Indian population. Stereoscopic color fundus photographs of seven standard fields were taken, lenses were examined for cataracts, and ophthalmoscopic examinations were performed.

Each patient underwent a Chem-25 blood analysis. Normal limits for the relevant tests were as follows: glucose (65-115 mg/dl), blood urea nitrogen (BUN) (8-23 mg/dl), creatinine (0.7-1.2 mg/dl), cholesterol (150- >240MR >260HR mg/dl), triglycerides (30-175 mg/dl fasting), serum glutamic-oxaloacetic transaminase (SGOT) (AST) (0-30 U/L), and alkaline phosphatase (30-110 U/L). Glycosylated hemoglobin also was calculated using affinity chromatography; the normal range was 4.0-7.0%.

The protocol for the ophthalmoscopic examination called for direct and indirect ophthalmoscopic examination by a single examiner (SWN). Indirect ophthalmoscopy utilized a +20.0 diopter condensing lens. The examiner indicated whether retinopathy was absent, questionably present, definitely present, or ungradable. If retinopathy was definitely present, the examiner evaluated the presence or absence of microaneurysms or dot hemorrhages, blot hemorrhages, hard or soft exudates, focal venous dilation or constriction (beading), intraretinal microvascular abnormalities (IRMA), new vessels at the disc or elsewhere, fibrous proliferations at the disc or elsewhere, and vitreous or preretinal hemorrhage.

In those tribes in which the rate of diabetic retinopathy was low, long duration of diabetes was uncommon . . .

For the purposes of this study, diabetic retinopathy of each eye was classified into one of four levels of severity: (a) none, (b) mild nonproliferative (definite microaneurysms, dot hemorrhages, blot hemorrhages), hard exudates (peripheral or central,

or circinate exudate), (c) moderate to severe nonproliferative retinopathy (any of the previous abnormalities, plus focal venous changes, definite IRMA, and/or cotton wool spots), (d) proliferative (in addition to any of the previous abnormalities, definite new vessels on the disc or elsewhere, fibrous proliferans at disc or elsewhere, vitreous or preretinal hemorrhage or evidence of prior scatter photocoagulation).

Thirty-five degree stereo photographs of the seven standard fields of each eye were taken on Kodachrome ASA 25 film with a Topcon fundus camera Model TRC-50VT. These may be helpful in future longitudinal studies. Patients with significant retinal pathology were further evaluated with fluorescein angiography and/or referred for photocoagulation.

The age at diagnosis was determined by subtracting the date of birth from reported date of diagnosis by a physician (according to the patient's memory). The duration of diabetes was that time period between the year of diagnosis (as reported by the patient) and the year of examination. Age at diagnosis and duration of diabetes were not verified by chart review. Persons who reported a parent, sibling, or child with diabetes mellitus were defined as having a first-degree relative with the disease. A positive history of diabetes mellitus in a second-degree relative was defined as history of the disease in a maternal or paternal grandparent.

The data were analyzed using the Statistical Package for the Social Sciences (SPSS) on a Heweltt-Packard 3000 mainframe computer.

Results

There were 50 persons who took insulin and 92 who did not. The only statistically significant difference between insulin-taking and non-insulin-taking subjects was that insulin-taking patients had significantly higher BUN levels ($p<.05$). No statistically significant differences were found in age at diagnosis, age at examination, duration, systolic or diastolic blood pressure, creatinine, cholesterol, triglycerides, alkaline phosphatase, SGOT (AST) or glycosylated hemoglobin (Table 1).

The prevalence and severity of retinopathy is presented in Table 2. In the entire sample, 49.3% (70/142) had retinopathy. Of these 70 persons, 45.7% had early nonproliferative retinopathy, 32.9% had moderate to severe nonproliferative retinopathy, and 21.4% had proliferative retinopathy.

The distributions of retinopathy levels are different in non-insulin-taking and insulin-taking groups. Approximately 54% of non-insulin-taking and 44% of insulin-taking persons were found to have no diabetic retinopathy. Of the 92 non-insulin-taking patients, 26% had early nonproliferative retinopathy, 11% had moderate to severe nonproliferative retinopathy, and 9% had proliferative disease. Persons who were taking insulin had more severe retinopathy than non-insulin-taking persons.

Table 1. Comparison Between Insulin-Taking and Non-Insulin-Taking Patients

	Insulin-taking			Non-insulin-taking		
	N	Mean	S.D.	N	Mean	S.D.
Age at diagnosis	42	43.0	10.6	84	46.7	12.5
Age at examination	49	54.7	10.3	91	56.5	10.7
Duration	43	10.9	6.9	85	9.4	8.3
Systolic BP	43	136	19.6	82	130	18.0
Diastolic BP	43	77	10.8	82	78	9.0
BUN*	45	18.6	10.0	88	15.5	7.0
Creatinine	45	1.2	0.7	89	1.0	0.4
Cholesterol	45	226	59.0	89	227	55.7
Triglycerides	45	260	142.1	89	279	163.8
Alkaline phosphatase	45	126	60.8	89	123	45.1
SGOT (AST)	45	22.4	15.3	89	18.4	8.5
Glycosylated Hgb	45	11.8	3.8	89	12.4	2.8

*$p < .05$

The frequency of retinopathy increased with the duration of the diabetes. The prevalence of retinopathy rose from 32.6% of persons who had had diabetes five years or less to 75.0% of those who had had diabetes for more than 20 years. The prevalence of proliferative diabetic retinopathy ranged from 4.7% of persons who had had diabetes 5 years or less to 37.5% of persons who had had diabetes more than 20 years. The prevalence of retinopathy was 60% in persons with diabetes diagnosed before age 30 and 49% in those diagnosed at age 30 years or older. The prevalence of proliferative diabetic retinopathy varied from 30% in younger-onset diabetics to 9.5% in those diagnosed at age 30 years or older.

Women were only slightly more likely than men to have retinopathy (50% vs 48%), and the rate of proliferative retinopathy was only minimally higher for women (12% vs 9%). Systolic blood pressure (BP) showed a consistent positive association with the prevalence of retinopathy. The prevalence ranged

Table 2. Prevalence and Severity of Diabetic Retinopathy in the More Severe Eye

	N	Any Retinop	%	No Retinop	%	Mild Nonprolif	%	Mod-Sev Nonprolif	%	Prolif	%
TOTAL	142	70	49.3	72	51.0	32	22.4	23	16.1	15	10.5
Sex											
Men	56	27	48.2	29	51.8	12	21.4	10	17.9	5	8.9
Women	86	43	50.0	43	50.0	20	23.3	13	15.1	10	11.6
Duration											
0-5 years	43	14	32.6**	29	67.4	7	16.3	5	11.6	2	4.7
6-10 years	37	19	51.4	18	48.6	13	35.1	5	13.5	1	2.7
11-16 years	18	8	44.4	10	55.6	1	5.6	2	11.1	5	2.8
16-20 years	22	17	77.3	5	22.7	7	31.8	6	27.3	4	18.2
Over 20 years	8	6	75.0	2	25.0	1	12.5	2	25.0	3	37.5
Age at onset											
Under 30	10	6	60.0	4	40.0	2	20.0	1	10.0	3	30.0
30 or older	116	57	49.1	59	50.9	27	23.3	19	16.4	11	9.5
Age at exam											
27-44	21	7	33.3	14	66.7	5	23.8	1	4.8	1	4.8
45-59	64	35	54.7	29	45.3	14	21.9	13	20.3	8	12.5
60-81	55	27	49.1	28	50.9	13	23.6	9	33.3	5	9.1
Weight†											
Ideal-19% over	9	5	55.6	4	44.4	2	22.2	1	11.1	2	22.2
20%-29% over	37	19	51.4	18	48.6	9	24.3	8	21.6	2	5.4
30%-49% over	46	22	47.8	24	52.2	9	19.6	8	17.1	5	10.9
50+% over	43	18	41.9	25	58.1	9	20.9	6	14.0	3	7.0
On insulin											
No	92	42	45.7	50	54.3	24	26.1	10	10.9	8	8.7
Yes	50	28	56.0	22	44.0	8	16.0	13	26.0	7	14.0
Systolic BP											
100-120	44	17	38.6	27	61.4	6	13.6	8	18.2	3	6.8
121-140	50	25	50.0	25	50.0	14	28.0	5	10.0	6	12.0
Over 140	31	19	61.3	12	38.7	8	25.8	7	22.6	4	12.9
Diastolic BP											
60-74	53	26	49.1	27	50.9	11	20.8	9	17.0	6	11.3
75-84	44	22	50.0	22	50.0	13	29.5	6	13.6	3	6.8
85-94	23	11	47.8	12	52.2	4	17.4	3	13.0	4	17.4
95-110	5	2	40.0	3	60.0	0	0.0	2	40.0	0	0.0
BUN											
Normal	117	54	46.2	63	53.8	28	23.9	15	12.8	11	9.4
High	16	11	68.7	5	31.3	3	18.8	5	15.3	3	9.7
Creatinine											
Normal	117	54	46.2	63	53.8	30	25.6	15	12.8	9	7.7
High	17	12	70.6	5	29.4	2	11.8	5	29.4	5	29.4
Cholesterol											
Normal	92	44	47.8	48	52.2	23	25.0	15	16.3	6	6.5
High	42	22	52.4	20	47.6	9	21.4	5	11.9	8	19.0
Triglycerides											
Normal	35	14	40.0	21	60.0	7	20.0	3	8.6	4	11.4
High	99	52	52.5	47	47.5	25	25.3	17	17.2	10	10.1

(table continues)

Table 2 (continued)

	N	Any Retinop	%	No Retinop	%	Mild Nonprolif	%	Mod-Sev Nonprolif	%	Prolif	%
Alkaline Phos.											
Normal	64	26	40.6	38	59.4	8	12.5	9	14.1	9	14.1
High	70	40	57.1	30	42.9	24	34.3	1	15.7	5	7.1
SGOT (AST)											
Normal	124	63	50.8	61	49.2	29	23.3	20	16.1	14	11.3
High	10	3	30.0	7	70.0	3	30.0	0	0.0	0	0.0
Glycosylated Hgb											
10.0 or under	41	20	48.8	21	51.2	14	34.1	2	4.9	4	9.8
10.1-14.0	50	23	46.0	27	54.0	9	18.0	8	16.0	6	12.0
Over 14.0	43	23	53.5	20	46.5	9	20.9	10	23.3	4	9.3
Current treatment											
None or diet	18	6	33.3	12	66.7	5	27.8	1	5.6	0	0.0
Oral agents	72	36	50.0	36	50.0	19	26.4	9	12.5	8	11.1
Insulin only	38	22	57.9	16	42.1	7	18.4	8	21.1	7	18.4
Insulin & oral	12	6	50.0	6	50.0	1	8.3	5	41.7	0	0.0
Family history of diabetes											
No	27	8	29.6	19	70.4	2	7.4	4	14.8	2	7.4
Yes	115	62	53.9	53	46.1	30	26.1	19	16.6	13	11.3
Indian heritage											
Full	112	57	50.9*	55	49.1	27	24.1	20	17.9	7	8.9
¾	13	8	61.5	5	38.5	2	15.4	3	23.1	3	23.1
Less than ¾	13	2	15.4	11	84.6	1	7.7	0	0.0	1	7.7
History of angina											
No	114	60	52.6	54	47.4	27	23.7	20	17.5	13	11.4
Yes	22	8	36.4	14	63.6	4	18.2	2	9.1	2	9.1
History of heart attack											
No	109	51	46.8	58	53.2	25	22.9	15	13.8	11	10.1
Yes	21	11	52.4	10	47.6	5	23.8	4	19.0	2	9.5
History of stroke											
No	125	60	48.0	65	52.0	30	24.0	18	13.6	9	10.4
Yes	11	6	54.5	5	45.5	1	9.1	3	27.3	2	18.2
History of renal disease											
No	114	56	49.1	58	50.9	29	25.4	18	15.8	9	7.9
Yes	21	12	57.1	9	42.9	2	19.5	5	23.8	5	23.8
Evidence of peripheral diabetic neuropathy											
No	35	15	42.9	20	57.1	10	28.6	3	8.6	2	5.7
Yes	107	55	51.4	52	48.6	22	20.6	20	18.7	13	12.1
Evidence of peripheral vascular disease											
No	105	46	43.8*	59	56.2	25	23.8	14	13.3	7	6.7
Yes	37	24	64.9	13	35.1	7	18.9	9	24.3	8	21.6

*$p < .05$, Chi Square **$p < .01$, Chi Square
†Based on weight tables for men and women published by American Diabetes Association, Texas Affiliate, Inc

from 39% of persons with systolic BP of 120 mmHg or less to 61% of those with measurements over 140 mmHg. Systolic BP, however, was not related to the severity of retinopathy. Persons with high BUN, creatinine, cholesterol, triglycerides, or alkaline phosphatase levels were more likely to have retinopathy (Table 2). High BUN, creatinine, or cholesterol levels also were associated with greater severity of retinopathy. Persons with high SGOT levels were less likely to have retinopathy, and if retinopathy was present in these persons, it was less likely to be in a proliferative stage.

The prevalence and severity or retinopathy varied according to the patients' current diabetes treatment. The prevalence varied from 33% of persons on no treatment or diet control only to 58% of those on insulin only, with 50% of those on oral agents or insulin and oral agents having retinopathy. Among the subjects, 115 reported a positive family history of diabetes. Of these 115 persons, 110 had at least one first-degree relative (parent, sibling, or child) with the disease, while the other 5 had only one or more grandparents with diabetes. Those with a positive family history were much more likely to have retinopathy (54% vs 30%), but their retinopathy was not necessarily more severe. Full-heritage and three-fourths-heritage Indians were more likely to have retinopathy than those with lesser Indian heritage.

Positive histories of heart attack, stroke, or renal disease (as reported by the patient) were associated with higher prevalence of retinopathy. Renal disease and stroke also were associated with greater severity of retinopathy. Patients were asked to indicate whether, at any time since they were first told they had diabetes, they had experienced numbness or tingling, or loss of sensation in the hands or feet, or decreased ability to feel the hotness or coldness of things they touched. Those who answered "yes" to any one or more of these questions (suggesting possible diabetic peripheral neuropathy) were more likely to have retinopathy (43% vs 51%), and if they did have retinopathy, it was generally more severe. Patients were asked to indicate whether they had ever experienced loss of hair on legs, ulcers or sores on the feet or ankles, or whether they had had a toe or leg amputated since the time they were first told they had diabetes. Those who had experienced any of these things (suggesting diabetic peripheral vascular disease) were more likely to also have retinopathy (44 vs 65%), and their retinopathy was more likely to be severe.

No consistent patterns in prevalence or severity of retinopathy were found according to age at examination, weight, diastolic blood pressure, or glycosylated hemoglobin. No patient had a diastolic blood pressure measurement higher than 110 mmHg.

The relationship between the presence of any retinopathy and various characteristics of the sample were examined by duration of diabetes (Table 3). Of the patients, 37.1% who had had diabetes for less than 10 years had retinopathy, compared to 65.5% of those who had had the disease 10 years or longer. In both duration groups, women were more likely to have retinopathy, but this difference was smaller among those who had had diabetes 10 years or longer. In those who had had diabetes for less than 10 years, persons aged 30 years or older at diagnosis were more likely to have retinopathy, but for the longer-duration group, the younger-onset patients had a higher prevalence of retinopathy. In the shorter-duration group, those persons not taking insulin were more likely to have retinopathy, while in the longer-duration group, persons on insulin had the higher prevalence rate. In patients who had had diabetes less than 10 years, the prevalence of retinopathy increased with diastolic blood pressure. In the longer-duration patients, however, this pattern was not consistent; the highest prevalence was among those in the "medium" diastolic pressure category.

Positive histories of heart attack, stroke, or renal disease were associated with higher prevalence of retinopathy.

The relationships of BUN and SGOT levels to retinopathy appeared to differ by duration group; in the shorter-duration group, high levels of BUN and SGOT were associated with lower retinopathy prevalence rates, but in the longer-duration group, high levels were associated with higher rates of retinopathy. In both duration groups, high levels of creatinine, cholesterol, triglycerides, and alkaline phosphatase were associated with higher prevalence of retinopathy, but the relationships were stronger in the longer-duration group.

Table 3. Prevalence of Retinopathy in the More Severe Eye by Duration of Diabetes and Other Characteristics

	Duration			
	Under 10 years		10 years or more	
	N*	%	N*	%
TOTAL	70	37.1	58	65.5
Sex				
Men	25	32.0	25	64.0
Women	45	40.0	33	66.7
Age at diagnosis				
Under 30	3	33.3	7	71.4
30 or older	66	37.9	50	64.0
Age at exam				
27-44	16	25.0	5	60.0
45-59	32	40.6	27	70.4
60+	21	42.9	25	60.0
Weight**				
Ideal-19% over	3	33.3	5	60.0
20%-29% over	16	37.5	19	63.2
30%-49% over	24	41.7	16	62.5
50% or more over	26	30.8	14	64.3
Insulin at present				
No	51	39.2	34	58.8
Yes	19	31.6	24	75.0
Systolic BP				
100-120	21	19.0+	17	58.8
121-140	27	33.3	20	70.0
Over 140	17	58.8	12	75.0
Diastolic BP				
60-74	17	23.5	27	63.0
75-84	28	39.3	14	78.6
85+	20	40.0	8	62.5
BUN				
Normal	63	38.1	44	63.6
High	3	33.3	10	70.0
Creatinine				
Normal	61	37.7	45	62.2
High	5	40.0	10	80.0
Cholesterol				
Normal	45	37.8	37	59.5
High	21	38.1	18	77.8
Triglycerides				
Normal	16	31.3	15	46.7
High	50	40.0	40	72.5
Alkaline phosphatase				
Normal	30	33.3	27	55.6
High	36	41.7	28	75.0
SGOT (AST)				
Normal	59	39.0	54.	64.8
High	7	28.6	1	100.0

(table continues)

The prevalence of retinopathy and its relationship to current diabetes treatment varied by duration. In the shorter-duration group, the highest prevalence of retinopathy was among those taking oral agents only, but of those who had had diabetes 10 years or more, the highest prevalence was among those on insulin only. The effect of positive family history of diabetes upon the prevalence of retinopathy was greater in the longer-duration group, and the effect of full Indian heritage (vs less inheritances) was smaller in this group. In the shorter-duration patients, those with a positive history of stroke were more likely to have retinopathy, but among longer-duration patients, the opposite was true; if the patient had had a stroke, they were less likely to have diabetic retinopathy. Similarly, shorter-duration patients with a history suggestive of diabetic peripheral neuropathy (numbness, tingling, loss of sensation in hands or feet, or decreased sensitivity to temperature) were less likely to have retinopathy, but longer-duration patients with such a history were more likely to have retinopathy.

The relationship of age at examination, weight, systolic blood pressure, glycosylated hemoglobin, history of angina, renal disease, or peripheral vascular abnormalities to the presence of retinopathy appear to differ little according to duration. No patient who had had diabetes for less than 10 years reported a history of heart attack, so it is unknown whether the association of heart attack and retinopathy differ by duration.

Discussion

Readers are strongly advised to review Klein's landmark studies (Wisconsin Epidemiological Study of Diabetic Retinopathy (WESDR II[19] and III[20]) and related reports describing the prevalence and risk of diabetic retinopathy in a population-based study in southern Wisconsin. Klein's study was unique in that a large population was examined using standardized protocols and objective recording of retinopathy by use of stereoscopic fundus photography combined with a standardized protocol for grading the retinopathy. To the degree feasible, his large study served as a model for this small Indian study.

West, in 1980, evaluated 973 diabetic Indian patients from 25 Oklahoma tribes and reported an overall prevalence of retinopathy of 24.4%.[21] The overall prevalence in the current study was 49.3%. West states that his sample included an overrepresentation in the 35-54 year age group. The greater age of most of our subjects may indicate longer duration

of diabetes, and therefore higher rates of retinopathy might be expected. West found an overall prevalence of proliferative diabetic retinopathy of 2.9%.[21] This is much lower than the 10% found in the current study. However, West's sample included only two persons (0.2%) with juvenile-onset diabetes while our sample contained 10 persons (7.9%) with onset of the disease prior to 30 years of age. This higher rate of juvenile-onset diabetes in our Indian sample is surprising in itself given previous studies[1,7,11-13] that report little or no juvenile-onset diabetes among most American Indians.

West determined that the "most powerful risk factor for microangiopathy (retinopathy and nephropathy) was duration of diabetes."[21] In both the current study and WESDR III, the duration of diabetes was strongly associated with the frequency and severity of retinopathy.[20] Nilsson, studying diabetics aged 20 to 79 years in Kristianstad, Sweden, reported that after a duration of 16 years, "the frequency of retinopathy was fairly steady, with 80-90% having retinopathy."[22] This is similar to but higher than the rates in the current study.

Indian diabetics in this study who were currently taking insulin had a longer duration of diabetes, were younger at diagnosis, and had a greater prevalence of retinopathy and a higher percentage with more severe retinopathy than non-insulin-taking patients. Klein reported similar findings.[19,20] In older-onset persons in the WESDR (diagnosis of diabetes at age 30 years or older), 39% of those persons who did not take insulin and 70% of those who did had retinopathy; 3% of the former and 14% of the latter had proliferative diabetic retinopathy.[23] In our study (92% of whom had onset of diabetes at age 30 years or older), 46% of those persons who did not take insulin and 56% of those who did had retinopathy; 9% of the former and 14% of the latter had proliferative diabetic retinopathy. If this apparent difference were substantiated by a larger sample, it would suggest a much higher prevalence of proliferative diabetic retinopathy in this non-insulin-taking Indian population than in non-insulin-dependent diabetics in the general population.

The frequency of retinopathy of 32.6% in the current study among persons who had had diabetes for 5 years or less is similar to those in some previous studies,[20,24] but higher than those found in other studies.[21,22,25,26] In the current study, rates of proliferative retinopathy of 4.7% in persons who had had diabetes for five years or less are higher than those found in Klein's (WESDR III) study, which reported

Table 3 (continued)

	Duration			
	Under 10 years		10 years or more	
	N*	%	N*	%
Glycosylated Hgb				
10.0 or under	20	25.0	15	73.3
10.1-14.0	22	31.8	25	60.0
Over 14.0	24	45.8	15	66.7
Current treatment				
None or diet alone	12	33.3	3	66.7
Oral agents only	39	41.0	29	62.1
Insulin only	12	25.0	21	76.2
Insulin & oral agents	7	42.9	3	66.7
Family history of diabetes				
No	12	16.7	13	38.5
Yes	58	41.4	45	73.3
Indian heritage				
Full	55	38.2	50	66.0
Less than full	13	23.1	7	57.1
History of angina				
No	58	39.7	45	71.1
Yes	10	20.0	11	54.5
History of heart attack				
No	59	39.0	42	64.3
Yes	6	0.0	12	75.0
History of stroke				
No	63	34.9	50	68.0
Yes	4	50.0	7	57.1
History of renal disease				
No	58	36.2	49	65.3
Yes	8	50.0	7	71.4
Evidence of peripheral diabetic neuropathy				
No	25	40.0	7	57.1
Yes	45	35.6	51	66.7
Evidence of peripheral vascular disease				
No	59	35.6	37	62.2
Yes	11	45.5	21	71.4

*N equals the number in the subgroup, not the number with retinopathy.
**Based on weight tables for men and women published by the American Diabetes Association, Texas Affiliate, Inc.
†$p < .05$, Chi Square

a prevalence of proliferative diabetic retinopathy of 2.0% in persons who had had diabetes less than five years.[20] They also are higher than in West's study, which reported 0.4% among persons who had had diabetes 5 years or less.[21] Because our sample contained 10 persons who had onset of diabetes before age 30 years, comparisons of our data with WESDR III data (in which age at diagnosis is 30 or more years) are not precise.

In the current study, the proportion of patients with proliferative disease is greater in younger-onset patients; 30% of those diagnosed before age 30 years vs. 10% of those diagnosed at age 30 years or older. Klein noted similar findings with 22% and 6% of younger- and older-onset patients, respectively, having proliferative retinopathy.[19,20] However, in the older-onset group, the number of patients with proliferative disease is greater (11 vs. 3 in our study, and 326 vs 240 in Klein's studies). The Diabetic Retinopathy Study (DRS) reported that there was a cumulative incidence of severe visual loss (less than 5/200) of 27% at 4 years and 37% at 6 years in untreated eyes with high risk characteristics (such as certain degrees of proliferative diabetic retinopathy). According to the DRS, panretinal photocoagulation may reduce the rate of severe visual loss by 50% or more in eyes with high risk characteristics.[27] Thus, our data reinforce Klein's recommendations for careful ophthalmologic examination shortly after the diagnosis of diabetes in all older-onset patients, whether on insulin or not, and the need for periodic examinations thereafter.

This higher rate of juvenile-onset diabetes in our Indian sample is surprising in itself given previous studies . . .

In both Klein's study (WESDR III) of older-onset diabetic patients and in the current Indian study, the prevalence rates of retinopathy did not increase consistently with age, but fell off in the oldest age ranges.[23] Klein suggested that this may reflect selective survival of diabetics with less severe forms of the disease.

In the current study, 11 of 134 patients (8.2%) had normal glycosylated hemoglobin levels (4.0%-7.0%) and 43 of 134 (32.1%) had glycosylated hemoglobin levels over 14.0%. This suggests that many of these Indian diabetics have not maintained their plasma glucose level in an optimal range for at least the preceding three months. The mean glycosylated hemoglobin levels in Klein's study were, for insulin-taking and non-insulin-taking diabetics, 11.9% and 10.3%, respectively.[20] For our Indian sample, comparative figures were 11.8% and 12.4%. Thus, the general diabetic population (WESDR) and these Indian diabetics have mean glycosylated hemoglobins substantially greater than the accepted upper normal limit. These figures suggest that blood glucose control may be poorer among non-insulin-taking Indians than among insulin-taking Indians in our study. Contrary to Klein's findings, in this study there was not a consistent relationship between glycosylated hemoglobin and greater risk or severity of diabetic retinopathy.[20] However, this finding was based on measurements which were nearly all in the abnormal range. Because only 8% of our sample had glycosylated hemoglobins in the normal range, our data cannot compare the presence or severity of retinopathy between patients with normal vs abnormal glycosylated hemoglobin levels.

Klein noted that systolic BP, in a statistically significant number of cases, is associated with presence of retinopathy in persons who have had diabetes for less than 15 years.[20] In a sample of non-insulin-dependent diabetic Pima Indians, Knowler found a positive relationships between systolic blood pressure and the incidence of exudates.[28] In the current Indian study, systolic BP, in a statistically significant number of cases, is associated with presence of retinopathy in persons who had had diabetes for less than 10 years. In patients who had had diabetes for 10 years or more, the association of systolic BP and retinopathy is present but not statistically significant. The highest diastolic BP recorded in our Indian study was 110 mmHg, and we found no relationship between the presence or severity of retinopathy and diastolic BP. This is in contrast to Klein's report, which indicated a relationship between severity of retinopathy and higher diastolic pressure level.[23]

Nearly 32% of the study population were 50% or more overweight. The prevalence of retinopathy is inversely associated with percent over ideal body weight, but the severity of retinopathy is not consistently inversely associated with weight. Klein deter-

mined the severity of retinopathy to be associated inversely with body mass index in non-insulin-taking persons.[20] In West's study, fatness was negatively correlated with retinopathy, and severe retinopathy was particularly common in leaner diabetics.[21]

In the current study, impaired renal function, as measured by elevated serum BUN and creatinine levels, was strongly associated with the presence of retinopathy. Elevated creatinine levels were also strongly associated with the severity of retinopathy. West also found a correlation between renal impairment (as measured by proteinuria and retinopathy.[21] He reported that 47% of those with heavy proteinuria had retinopathy.[21] This is considerably lower than the 71% prevalence of retinopathy among our group with elevated creatinine levels. However, West found that only a small percentage of persons with proteinuria also had elevated serum creatinine levels. Thus, our prevalence figure may be higher because serum testing may have only detected those with the more severe renal impairment.

A positive family history of diabetes was strongly associated with the presence of retinopathy in the current study. This is similar to but much stronger than the finding of West, who reported a weak relationship between presence of retinopathy and family history of diabetes.[21] In the current study, persons with three-fourths or greater Indian heritage were much more likely to have retinopathy than those of less Indian heritage. West found little difference in retinopathy according to degree of Indian heritage, but his study design compared full-heritage Indians to those with 50% to 99% Indian heritage.[21]

Because the number of patients in this study is small and the sample group was not randomly selected, the results cannot be generalized to the entire diabetic population served by the Clinton-area Indian health facilities. Conclusions, therefore, must be drawn with great caution. Reported clinical findings and classification of retinopathy level are questionable when not confirmed by grading of fundus photographs. Confirmation of patient questionnaire responses by chart review and utilization of more strictly standardized protocols for blood pressure measurement would strengthen study results. Nevertheless, our data may be helpful as an initial attempt at assessing diabetic retinopathy in this Indian population.

Because it is possible that apparent relationships reflect a common but unidentified underlying factor, no inferences as to cause and effect of relationships of various risk factors to retinopathy should be made. Additional cross-sectional and longitudinal data are needed to better define the nature of diabetic retinopathy and risk factors in this predominantly Cheyenne-Arapaho Indian population.

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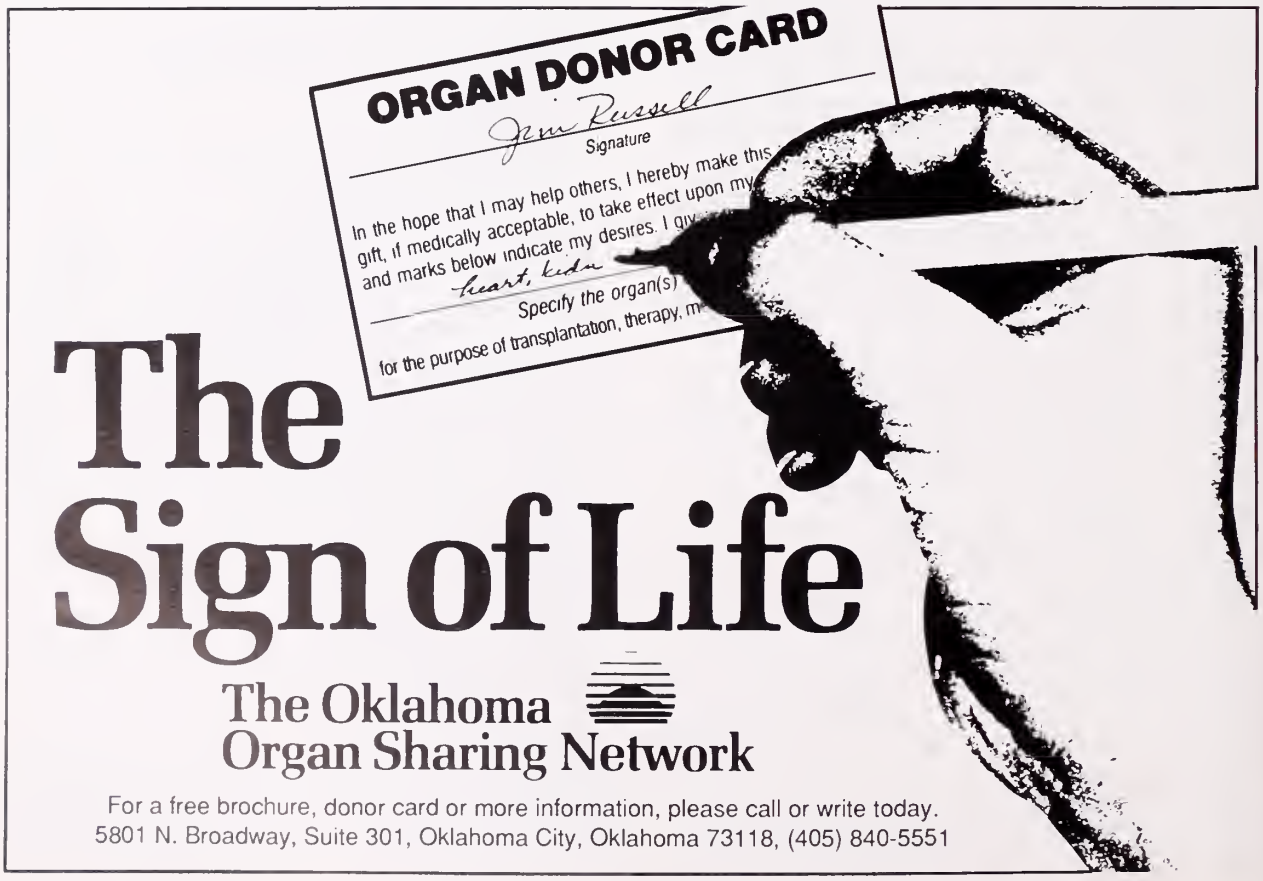

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News from
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Department of Health

Healthy Futures Program

In 1988 Oklahoma was one of six states awarded grants by the Robert Wood Johnson (RWJ) Foundation to improve maternal and infant care. The Oklahoma Healthy Futures Program grant award was part of a special RWJ program, "Health Futures: A Program to Improve Maternal and Infant Care in the South."

This prestigious grant provides Oklahoma with the unique opportunity to put into action a variety of programs, projects, and public awareness campaigns to reduce infant mortality, low birthweights, delivery complications, and infant deaths.

The program is designed so that seven Area Perinatal Coordinators — two urban and five rural — working under the oversight of Project Director Joy L. Leuthard, develop and implement area-specific "customized" plans which assure access and provide for perinatal services in local communities.

These coordinators identify available services, funding sources, gaps, and barriers to maternity services in their area. They seek out and coordinate with those key health professionals, agency representatives, community organizations, and business leaders who will combine forces to develop local solutions which will overcome barriers to perinatal services.

Although the program is administered through the Oklahoma State Department of Health, a steering committee chaired by Robert Fulton, secretary of the Governor's Social Services Cabinet, provides direction in addressing statewide problems and policy issues. For example, in June, committee members met with medical services representatives from the Department of Human Services to discuss maternal eligibility and reimbursement issues regarding Medicaid. Future meetings will target issues such as the rising costs of physician malpractice insurance premiums and their resulting effect on the relationship to the reduction of practicing OB/GYN physicians, and the problem of rural hospital closures.

Physicians who have specific concerns or comments regarding these issues or other perinatal issues are encouraged to contact the Healthy Futures Project Director, Joy L. Leuthard, phone 405/271-4476.

DISEASE	Monthly Reporting Period Ending 5/31/89	TOTAL TO DATE		
		This Year	Last Year	5 Yr. Avg.
ACQUIRED IMMUNE DEFICIENCY SYNDROME	1B	62	S3	7
CAMPYLOBACTER INFECTIONS	21	65	S0	74
CHLAMYDIA INFECTIONS	33B	1,12S	1,0B7	#
ENCEPHALITIS, INFECTIOUS	1	7	6	9
GIARDIA INFECTIONS	20	66	S7	71
GONORRHEA (Use ODH Form 228)	S47	2,672	2,90B	4,375
HAEMOPHILUS INFLUENZAE INVASIVE DISEASE	14	B1	97	9S
HEPATITIS A	21	161	249	191
HEPATITIS B	14	73	78	86
HEPATITIS, NON-A NON-B	4	14	20	23
HEPATITIS UNSPECIFIED	1	9	17	2B
HUMAN IMMUNODEFICIENCY VIRUS INFECTIONS	21	16B	*	*
MENINGITIS, BACTERIAL (non-meningococcal, non H. Influenzae)	14	62	8	25
MENINGOCOCCAL INFECTIONS	4	11	B	16
MUMPS	1B	15B	1S6	—
PERTUSSIS	1	9	25	69
RABIES (ANIMAL)	9	43	1B	33
ROCKY MOUNTAIN SPOTTED FEVER	7	B	1S	23
SALMONELLA INFECTIONS	37	128	B7	120
SHIGELLA INFECTIONS	12	S0	49	65
SYPHILIS (Use ODH Form 228)	35	40	7S	72
TUBERCULOSIS	24	84	BS	9B
TULAREMIA	2	4	7	5

#Made Reportable in 1985 —Made Reportable in 1987 *Made Reportable in 1988

Injuries	Total to Date This Year	Fatalities No. (%)
BURN	259	S2 (20)
TRAUMATIC SPINAL CORD INJ	29	23 (79)
DROWNING/ NEAR DROWNING	39	12 (31)

Diseases of Low Frequency	Total to Date This Year
AMEBIASIS	0
BRUCELLOSIS	2
LEGIONNAIRES' DISEASE	10
MALARIA	1
MEASLES (RUBEOLA)	67
REYE SYNDROME	1
RUBELLA	1
TETANUS	0
TOXIC SHOCK SYNDROME	7
TYPHOID FEVER	1

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Uninsured hospital patients getting unequal treatment?

People without medical insurance not only have difficulty gaining access to medical services, but once hospitalized they also may receive less treatment than insured patients, says a report from Massachusetts.

In a study of more than 65,000 patients at 52 hospitals in the Boston area during 1983, researchers found that uninsured patients, on average, were discharged earlier and underwent fewer procedures than Blue Cross patients. Their hospital stays were also shorter than were those of Medicaid patients, though they underwent a similar number of procedures, report the authors, Joel Weissman, PhD, and Arnold M. Epstein, MD, MA, of the Harvard School of Public Health, Boston.

After adjusting for types and overall severity of illness, they found that uninsured patients had, on average, 7% shorter stays (5.36 vs 5.79 days) and underwent 7% fewer procedures (1.16 vs 1.25) than Blue Cross patients, while Medicaid patients stayed 5.87 days on average.

Previous studies suggest that financial considerations influence the amount of care a patient receives, at least on the outpatient level, the authors report. "Our results suggest that there may be important differences in utilization even after patients are hospitalized. The effects we found occurred in all types of hospitals, including major teaching and public hospitals — institutions commonly considered to be relatively blind to payment source." These results suggest that hospitals and/or their physicians do consider patient payment resources — or that patients themselves may limit the care they receive to avoid increasing their hospital bills, the authors say.

The case mix of uninsured patients differed substantially by hospital type, with major teaching and especially public hospitals likely to have more patients with illnesses that required longer-than-average lengths of stay, they report. These results tend to confirm that lower overall utilization by uninsured patients persists across hospital types and over a wide range of medical conditions, the authors say.

"Our findings also support the view that public hospitals and some major urban teaching hospitals serve special populations that other institutions are unwilling or perhaps unable to serve," they write. "Although we lacked data on income and housing situation, the results are consistent with the popular view of the urban public hospital as the provider of last resort for persons with multiple problems at the bottom of the socioeconomic scale."

Several states are considering expanding the Medicaid program to extend health insurance to some of the needy population, and last year Massachusetts was the first state to initiate a program

AMA to host autumn meeting on prevention of family violence

In October, the American Medical Association (AMA) and more than 35 other national organizations will sponsor "The National Conference for the Prevention of Family Violence and Victimization."

The meeting will run Thursday through Saturday, October 5-7, in Chicago.

In its First Call for the conference, the AMA notes that an estimated 5% to 20% of all adults have been involved in some form of spouse abuse, and nearly 50% of husbands who batter their wives do so regularly. Each year, nearly 1.5 million children are subjected to physical or sexual abuse by family members. And the numbers are growing.

The conference will address this major public health problem with workshops and sessions featuring recognized experts in the following areas: elder abuse, neglect, and exploitation; spouse abuse; violence within minority families; child abuse and family violence; substance abuse and family violence; intervention programs for individuals and families; the law and practitioners; the victim service movement; and family violence and the media.

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Uninsured patients *(continued)*

to provide insurance for individuals without coverage, the authors report. "To the extent that universal insurance empowers the individual to function in the marketplace, these differences may decrease. . . . Our results suggest that this strategy may be viable, at least in reducing inequities in lengths of stay."

"Caring for poor and uninsured patients may be the Achilles' heel of the competitive health policies that have emerged in the 1980s," they write. "However, it would be unwise to conclude from our results alone that uninsured patients were underserved or were harmed by the differences in treatment patterns. We know, for example, that lengths of stay have been decreasing nationwide during the last decade, but so far there is little evidence that the quality of care has been reduced." It is possible that the longer hospital stays and more procedures used by insured patients in the Boston area may be the result of overutilization, they suggest.

The report appears in the June 23 issue of the *Journal of the American Medical Association (JAMA).*

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Nominations now being accepted

New AMA Nathan Davis Awards to recognize public officials

The American Medical Association (AMA) reminds members that nominations are now being accepted for its new Dr Nathan Davis Awards. The awards will recognize elected officials and career government officials who have made notable public service contributions toward improving the quality of health services.

Named in honor of Nathan Davis, MD, founder of the AMA, the awards will be bestowed upon individuals in the following seven governmental fields: a US Senator, a US Representative, a Presidential appointee serving in the executive branch of government, a career public servant serving in the executive branch, a governor, a state legislator, and a mayor or elected county chief executive.

Nominations must be made soon since the awards, expected to be a major national event, will be presented at a dinner next October in the nation's capital.

Award recipients will be selected by a panel of distinguished individuals from the public, private, and organizational sectors.

Criteria for the 1989 awards are as follows: outstanding public service accomplishment in 1988 and 1989, is a recognized leader in one of the seven fields, contributed to broadening public awareness of health matters, promoted the art and science of medicine through government service, and developed a special project that contributed to the public health of a specific community or selected population.

Nominations should be submitted to Dr Nathan Davis Awards, Office of the Secretariat, c/o Suite 870, 1050 Connecticut Avenue NW, Washington, DC 20036.

Direct telephone inquiries to the awards secretariat at (202) 785-1391.

Beyond pill counting

Microprocessors in pill bottles shed light on compliance problems

A new report on patient compliance underscores what health professionals have long known — patients, even those with a serious condition, do not take their medication as prescribed.

In a study of 24 epilepsy patients, the authors, Joyce A. Cramer, of the Veterans Administration, West Haven, Conn, and colleagues found that "despite the potential for socially unacceptable and medically dangerous consequences," compliance with prescribed medication regimens averaged 76% over 3,428 days observed. The researchers measured compliance by means of pill bottles with microprocessors in their caps that recorded bottle openings; each opening and closing was presumed to represent a dose of medication.

Compliance by the study subjects worsened as the number of prescribed daily doses of medication increased, the authors found. Compliance for patients on a once-daily dose was 87%; it was 81% for twice-daily doses, 77% for three times a day, and just 39% for four-times-a-day doses.

"Medical practitioners in all fields have long known that patients do not routinely follow instructions for the use of medication or other aspects of treatment," the authors write. Failure to follow a prescribed regimen confounds the clinician's ability to evaluate the medication's efficacy, they add; "overdosing, underdosing, and erratic dosing can diminish drug action or cause adverse effects."

The traditional methods for compliance assessment have been patient interviews, measuring drug concentrations, in serum samples or other biological markers, and pill counting. None of these, however, can be considered a "gold standard" of compliance, the authors report.

Among the epilepsy patients studied, "coefficients of variation of drug serum concentrations had no significant relationship to compliance rates," the authors say, while pill counts "overestimated compliance increasingly as compliance with the prescribed regimen declined." What's more, they say, neither drug serum concentrations nor pill counts would have identified the frequency of missed doses that were detected by continuous dose observations.

The microprocessor-equipped pill bottles represent an enhanced means of compliance monitoring "by explaining the total number of doses, the number of doses taken daily, and whether the prescribed

Pill bottles *(continued)*

schedule was used," say the researchers. In addition, they say, detailed review of dose time and frequency can be used to understand drug serum concentrations and link events such as seizures to specific dosage patterns.

For example, the authors note, seven patients studied reported seizures during monitoring; five of these had at least one seizure associated with missed medication doses documented by the pill bottle monitoring system. Two other seizures were linked to dosing that might have interfered with sleep in patients with a type of epilepsy that could be precipitated by sleep deprivation, the authors say. Such seizure-related noncompliance was not evident by patient history, drug serum concentration measured at the clinic, or total pill counts, the study notes.

The report appears in the June 9 issue of the *Journal of the American Medical Association (JAMA).*

DEATHS

Orville McClure Woodson, MD
1907 - 1989

Retired Norman general practitioner Orville M. Woodson, MD, died May 11, 1989. A Life Member of the Oklahoma State Medical Association, Dr Woodson was born in Monroe, Indian Territory, and graduated from the University of Oklahoma School of Medicine in 1933. He practiced in Poteau for several years before moving to Norman in 1942.

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1988

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Vernon Dean Cushing, MD	June 19
James Breese Darrough, MD	June 29
Paul Thurston Powell, MD	July 1
Jack Burgess Tolbert, MD	July 12
John Ralph Rafter, MD	August 1
Luther Harrison Becker, MD	August 9
Clemens Maximilian Hartig, MD	August 27
John Copeland Pickard, MD	August 31
Peter A. MacKercher, MD	September 17
Haskell Smith, MD	September 27
William Eldon Wendel, MD	October 5
Tullos Oswell Coston, MD	October 21
Frank Herbert Austin, MD	November 11
Lyman Cunningham Veazey, MD	November 11
Loyd Lee Long, Jr., MD	December 6
Michael W. Brown, MD	December 25
Charles Nathaniel Atkins, MD	December 28
French LaZelle Worthen, MD	December 28

1989

John Hoyle Carlock, Jr., MD	January 19
Michael Bailey McCarty, MD	January 22
Alexander Shadid, MD	February 2
Moorman Paul Prosser, MD	February 12
Robert Vern Weger, MD	February 18
William Lawrence Bond, MD	March 26
Mary Edna Sippel, MD	April 10
Ruben Hilton Mayberry, MD	April 20
Norman Eugene Dearnbarger, MD	May 6
Gordon Kent Jimerson, MD	May 6
Orville McClure Woodson, MD	May 11
Robert Sears Davis, Jr., MD	May 13
James Richard Riggall, MD	May 30

REACTION TIME

Member chides OSMA leadership for not representing him

To the Editor: It is disturbing to me that our Society has gone on record as supporting HB 1482. This bill would have broadened and legalized the withholding or withdrawing of water and food from many more patients than those who can now have food and water legally withheld or withdrawn through the Oklahoma Hydration and Nutrition for Incompetent Patients Act. Furthermore, it is disturbing that those in leadership can claim to represent the membership in these serious matters when the membership has not been informed of the content of HB 1482, and I would venture to say that the majority of physicians are not aware of the content or the significance of the Oklahoma Hydration and Nutrition for Incompetent Patients Act, as it was passed on April 24, 1987. Please do not state that you represent me when you support laws such as these. Furthermore, do not claim to represent the membership when the membership has not been informed of the content of such laws, much less given the opportunity to express our concerns or have input into such laws.

Before anyone considers any further amendments or alterations of any of these laws, please inform the membership of the content and significance of such laws. Where are our efforts to inform the general public of such laws that legalize the withholding of food and water from patients?

—*Paul A. Byrne, MD*
Tulsa

The 1989 Legislature filed 1180 bills, and about 250, including HB 1482, contained medical issues needing a reaction from the medical profession. We await Dr Byrne's opinion on the other 249 bills.

—The Editor

WORTH REPEATING

Equity for Rural Hospitals Act getting congressional attention

To OSMA Executive Director David Bickham: As you know, I have long been concerned about the equity of Medicare reimbursements to health care providers in rural areas. The current system of reimbursement under Medicare unfairly penalizes practitioners in Rural America and I have worked continually to try to modify this system.

We have quality health care providers in rural areas just as deserving of equitable treatment under the Medicare program as their urban counterparts. This is a position I have repeatedly conveyed when testifying before various House committees to stress the need for more equitable treatment under Medicare for rural programs. And, as a member of the Rural Health Care Coalition, I am actively working with my colleagues to address the health crisis facing Rural America in not only obtaining quality health care, but maintaining it.

This is one reason I was especially pleased to know that the House Ways and Means Committee is expected to include in its budget reconciliation bill a number of provisions which will benefit rural areas. For your perusal, enclosed is a copy of a letter I have received from my colleague, Congressman J. J. Pickle, which denotes the provisions relative to health care in Rural America. I will continue to do everything I can to bring fairness and equity for rural towns. I would be interested in receiving any additional views you may have on these provisions as this package will come to the full House for consideration in the near future.

Again, I wanted to take this opportunity to update you on this issue.

—*Congressman Wes Watkins (D-Okla)*

To Congressman Wesley W. Watkins: As a cosponsor of the Equity for Rural Hospitals Act, I know that correcting inequities in the Medicare program to help rural hospitals is one of your top priorities in this session of the Congress. I wanted to let you know of some important developments on this issue.

Last Thursday, the Ways and Means Subcommittee on Health unanimously adopted its Medicare budget plan for Fiscal Year 1990. In spite of taking steps to reduce the projected increase in Medicare spending by $2.9 billion, the subcommittee also adopted a $167 million package to assist rural hospi-

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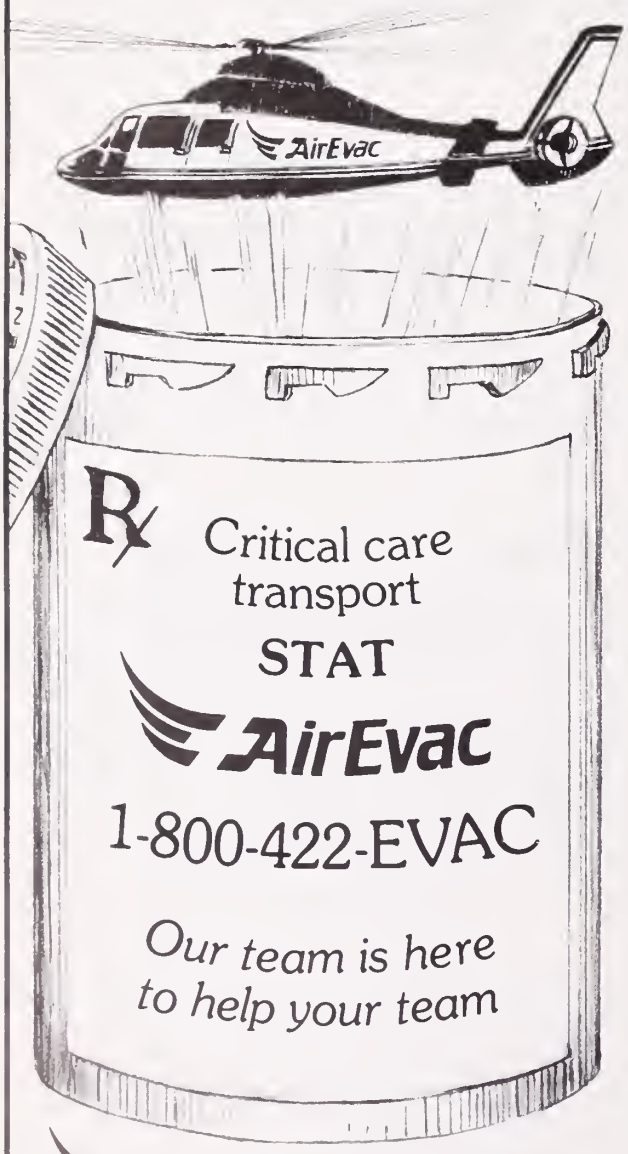

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tals which includes many of the concepts in H.R. 762. An outline of the subcommittee package is included for your review.

The package addresses the key inequity in Medicare hospital payments to rural hospitals: the inequitable differential between standardized payments to rural and urban hospitals. This compromise would reduce the current difference in payments by almost one-fourth, increasing payments to all rural hospitals by over $137 million. The plan also requires the Secretary of Health and Human Services to examine how the remaining differential could be eliminated entirely.

The subcommittee's proposal also creates a major demonstration program aimed at giving small rural hospitals with low occupancy an alternative to competing with larger hospitals. The program will test the concept of developing "essential access to community hospital" networks in which small hospitals would provide emergency and primary care, and transfer more costly inpatient cases to a central hospital.

This demonstration could be a significant alternative for small rural hospitals that just can't compete in the current market. If the program works, it would be a way for Medicare to help assure that these facilities continue to provide essential medical care to beneficiaries in rural areas. Health Subcommittee Chairman Pete Stark deserves credit for advancing this innovative project.

Finally, the subcommittee package also extends special financial aid to rural referral centers or sole community hospitals, and requires the Secretary to develop guidelines to allow rural hospitals near urban areas to apply for Medicare reimbursement.

I wanted to advise you of this package because the subcommittee's budget proposal will be considered by the full Ways and Means Committee next week. You may want to visit with members of your state delegation who serve on the committee to remind them of your interest in this legislation and how important it is for your state to provide meaningful assistance to rural hospitals. Also, if you see Pete Stark in the next week, let him known how much we all appreciate his willingness to help address this critical problem. We could not have achieved this compromise without his help.

If you have any questions or comments on this legislation, feel free to contact Dave Mason in my office (5-4865). Thanks again for your support for this initiative.

—Congressman J.J. Pickle (D-Tex)

Monte Foreman's Horse-Training Science. By Monte Foreman and Patrick Wyse. Norman: University of Oklahoma Press, 1983. Pp 144, 300 illus, price $24.95.

Oklahoma is horse country. The University of Oklahoma Press, a consistent leader in the publication of books about the Southwest, has produced a guide by this country's most prominent trainer of horses and riders. Foreman, who lives in Elbert, Colorado, has spent his entire lifetime working with horses in various capacities — cowboy, arena performer, US cavalryman, polo player, competitor, and trainer. Along with his first accredited instructor, Patrick Wyse, he offers a step-by-step guide to the training of horses. The book begins with a discussion of the attributes, both physical and mental, of the horse. Following this there is a discussion of saddles and riding accessories and pertinent comments on the rider. Several chapters giving detailed instruction on various riding maneuvers such as the turn on the forehand, side pass, balanced stops, and others are discussed.

The oversized book is for both beginners who wish to learn riding and advanced riders who wish to improve or correct their performance. It is richly illustrated with photographs and drawings.

This is an excellent manual for all interested in horses.

—Harris D. Riley, Jr., MD
Oklahoma City

Recollections of a Regimental Medical Officer. By H.D. Steward. Melbourne University Press, 1983. Pp 169, illus, price $16.95.

This is the fascinating story of a regimental medical officer with the Australian Imperial Force during World War II. After 18 months of residency training at the Royal Melbourne Hospital, Steward volunteered for military duty in February 1940. He was assigned to an infantry battalion and, after a period of training at Camp Puckapunyal in Australia, was assigned with his unit in late 1940 to Syria. Three chapters take the reader through action in the Middle East and garrison duty in Syria.

The major portion of the book deals with the assignment of his regiment to the South Pacific and

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its participation in the underpublicized campaign in New Guinea in 1942. Dr Steward describes vividly the struggles of a gallant unit crossing the Owen Stanley mountains on the primitive Kokoda Trail. The regiment was poorly equipped and supplied and daily faced death from disease. Having been sorely depleted from the long and torturous journey over the mountains, the regiment was no match for the entrenched Japanese troops. It was further decimated during a bitterly contested retreat to the south of New Guinea. Along the way Steward clearly enunciates his pride in his unit and its members and the seemingly insurmountable problems of a battalion medical officer in New Guinea. His frustration at his inability to prevent disease and at the bungling of higher command comes through frequently. His military unit numbered 1200 men at the outset of the campaign, but only 200 could be mustered at the end of it. The illustrations depict the terrifying jungle conditions under which the unit fought.

The story ends aboard a ship enroute to Australia to which the author was returned on the last day of 1942. One wishes to know how he spent the remainder of the war.

Almost 40 years transpired before Dr Steward completed his manuscript, but it has been well worth the wait. It is a fine personal tribute to his former regimental comrades. It is also a useful addition to the medical history of World War II.

—Harris D. Riley, Jr., MD
Oklahoma City

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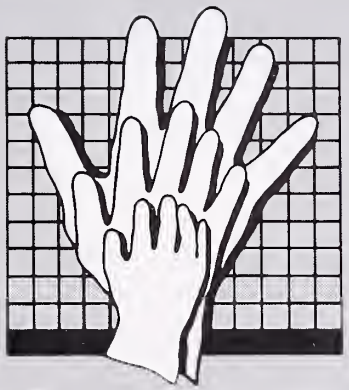

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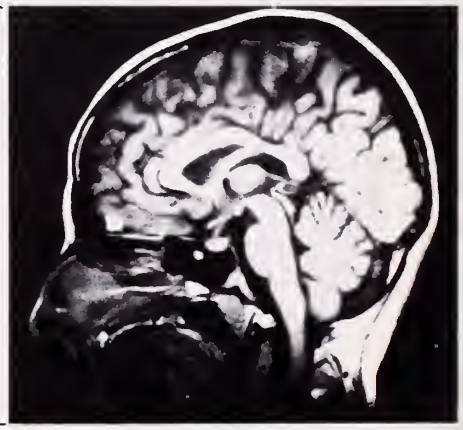

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■ **Registration is now open for the Oklahoma** Physicians Seventeenth Annual Winter Seminar to be held this year at the Foxpine Inn in Copper Mountain, Colo. The meeting will run from Wednesday, December 27, 1989, to Tuesday, January 2, 1990. It features presentations from the faculty of the University of Oklahoma College of Medicine and from the meeting's registrants. The program committee considers submitted topics and the results of surveys in developing the 16-hour program. Early registration will allow participation in program development breakfast meetings as well as group discount lodging (limited availability). Registration is $245, with a discount available on request to retired physicians. For further details contact Contemporary Medical Educators, c/o Irwin H. Brown, MD, Doctors' Medical Plaza-South, 3435 NW 56th Street, #206, Oklahoma City, OK 73112, (405) 946-0548.

■ **Lyme disease is far less prevalent in Okla**homa than in the northeastern and midwestern US, according to the Oklahoma State Department of Health (OSDH). This is primarily because the type of tick that carries the disease is much less common here. In its June *Epidemiology Bulletin,* the OSDH reports there were only seven confirmed and two presumptive cases of Lyme disease in Oklahoma last year. "There is some debate about whether Lyme disease will ever develop into the problem here that it has been in the east," the report notes. "Some investigators doubt the disease can institute itself in the environment that exists in Oklahoma, or the rest of the southwest for that matter, due to the natural history of the disease. The ecology in Oklahoma is very different from that seen in the northeast."

■ **There is growing concern that long-term** exposure to ultraviolet (UV) radiation may increase the risk of age-related macular degeneration, a deterioration of the central part of the retina that is the leading cause of irreversible severe visual loss among American adults. However, a report in June's *Archives of Ophthalmology* suggests that, at least in people with intact natural lenses in their eyes, long-term UV exposure does not seem to be associated with increased risk of this condition. The study, by Sheila K. West, PhD, of the Johns Hopkins Hospital, Baltimore, and colleagues, involved a survey of 838 Maryland fishermen who had well-characterized ocular exposure to UV-A and UV-B. The results suggested that age-related macular degeneration was not associated with cumulative exposure to either UV-A or UV-B. "Our data do not support the theory that long-term exposure to sunlight under working conditions is a major factor in the etiology of macular degeneration," the authors conclude. They note, however, that their results may not apply to people whose natural lenses are not intact.

■ **Nonsteroidal anti-inflammatory drugs** (NSAIDs) have been associated with photosensitivity reactions, or dermatologic symptoms sparked by exposure to sunlight, but the mechanism underlying this problem remains unknown. Now, a report in June's *Archives of Dermatology* indicates that different NSAIDs may induce such photosensitivity reactions through phototoxicity or other mechanisms. The report's authors, Kays H. Kaidbey, MD, of the Hospital of the University of Pennsylvania, Philadelphia, and Fred N. Mitchell, MD, of the Beecham Laboratories, Bristol, Tenn, studied four NSAIDs for their phototoxicity potential in ten human volunteers exposed to ultraviolet (UV) light after taking the drugs. Abnormal skin reactions strongly suggestive of phototoxicity were seen following UV exposure in the case of two of the drugs tested, nabumetone and naproxen, but not in the other drugs studied, including piroxicam, a drug reported to cause photosensitivity, the authors say. "Thus, although certain NSAIDs are potentially capable of producing phototoxicity reactions, others can presumably provoke clinical photosensitivity through other mechanisms," they conclude.

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ontraindications: VASDTEC® (Enalapril Maleate, MSD) is contraindicated in patients who are hypersensitive to this roduct and in patients with a history of angioedema related to previous freafmenf wifh an ACE inhibifor.

Varnings: *Angioedema:* Angioedema of the face, extremities, lips, tongue, glottis, and/or larynx has been reported in atients treated with ACE inhibitors, including VASDTEC. In such cases, VASDTEC should be promptly discontinued and the atient carefully observed until the swelling disappears. In instances where swelling has been confined to the face and lips, he condition has generally resolved without treatment, although antihistamines have been useful in relieving symptoms. ngioedema associated with laryngeal edema may be fatal. **Where there is involvement of the tongue, glottis, or rynx likely to cause airway obstruction, appropriate therapy, e.g., subcutaneous epinephrine solution :1000 (0.3 mL to 0.5 mL), should be promptly administered.** (See ADVERSE REACTIONS.)

ypotension: Excessive hypotension is rare in uncomplicated hypertensive patients freated with VASDTEC alone. Heart ailure patients given VASOTEC commonly have some reduction in blood pressure, especially wifh the firsf dose, but iscontinuation of therapy for continuing symptomafic hypotension usually is nof necessary when dosing instructions re followed, caution should be observed when initiating therapy (See DOSAGE AND ADMINISTRATION.) Patients at isk for excessive hypotension, sometimes associated with oliguria and/or progressive azotemia and rarely with acute enal failure and/or death, include fhose with the following conditions or characferisfics: heart failure, hyponafremia, igh-dose diuretic therapy, recent infensive diuresis or increase in diuretic dose, renal dialysis, or severe volume and/or alt depletion of any etiology. It may be advisable to eliminafe the diuretic (except in heart failure patients), reduce the uretic dose, or increase salt intake cautiously before initiating therapy with VASDTEC in patients at risk for excessive ypotension who are able to folerate such adjustments. (See PRECAUTIONS, *Drug Interactions* and ADVERSE REACIONS.) In patients at risk for excessive hypotension, therapy should be started under very close medical supervision nd such patients should be followed closely for the first two weeks of treafment and whenever the dose of enalapril nd/or diuretic is increased. Similar considerations may apply to patients with ischemic heart disease or cardiovascular isease in whom an excessive fall in blood pressure could result in a myocardial infarction or cerebrovascular accident excessive hypotension occurs, the patient should be placed in supine position and, if necessary, receive an intravenous infusion of normal saline. A transient hypofensive response is nof a confraindication to furfher doses of VASDTEC, hich usually can be given without difficulfy once the blood pressure has stabilized. If symptomafic hypotension evelops, a dose reduction or discontinuation of VASOTEC or concomitant diuretic may be necessary.

eutropenia/Agranulocytosis: Anofher ACE inhibifor, captopril, has been shown to cause agranutocytosis and bone marw depression, rarely in uncomplicated patients but more frequently in patients with renal impairment, especially if they so have a collagen vascular disease. Available data from clinical frials of enalapril are insufficient to show fhat enalapril oes nof cause agranulocytosis af similar rates. Foreign marketing experience has revealed several cases of neutropenia agranulocytosis in which a causal relationship to enalapril cannof be excluded. Periodic monitoring of white blood cell ounts in patients with collagen vascular disease and renal disease should be considered.

recautions: *General: Impaired Renal Function:* As a consequence of inhibiting the renin-angiotensin-aldosterone ystem, changes in renal function may be anficipated in susceptible individuals. In patients with severe heart failure hose renal function may depend on the acfivity of the renin-angiotensin-aldosterone system, treatment with ACE hibitors, including VASOTEC, may be associated with otiguria and/or progressive azotemia and rarely with acute renal ilure and/or death.

clinical sfudies in hypertensive patients with unilateral or bilateral renal artery stenosis, increases in blood urea itrogen and serum creafinine were observed in 20% of patients. These increases were almost always reversible upon iscontinuation of enalapril and/or diuretic therapy. In such patients, renal function should be monitored during the first w weeks of therapy

ome patients with hypertension or heart failure wifh no apparent preexisting renal vascular disease have developed ncreases in blood urea and serum creafinine, usually minor and transient, especially when VASDTEC has been given oncomitantly with a diuretic. This is more likely fo occur in patients with preexisfing renal impairment. Dosage reducon and/or discontinuation of the diuretic and/or VASDTEC may be required.

valuation of patients with hypertension or heart failure should always include assessment of renal unction. (See DDSAGE AND ADMINISTRATION.)

yperkalemia: Elevated serum potassium (> 5.7 mEq/L) was observed in approximately 1% of hypertensive patients in inical trials. In most cases these were isolated values which resolved despite continued therapy. Hyperkalemia was a ause of disconfinuation of therapy in 0.28% of hypertensive patienfs. In clinical trials in heart failure, hyperkalemia was bserved in 3.8% of patients, but was nof a cause for disconfinuation.

isk factors for the development of hyperkalemia include renal insufficiency, diabetes mellitus, and the concomitant use potassium-sparing diuretics, potassium supplements, and/or potassium-containing salt substitutes, which should e used cautiously, if at all, with VASDTEC. (See *Drug Interactions.*)

urgery/Anesthesia: In patients undergoing major surgery or during anesfhesia wifh agents that produce hypofension, nalapril may block angiotensin II formation secondary to compensatory renin release. If hypotension occurs and is onsidered to be due to this mechanism, it can be corrected by volume expansion.

formation for Patients:

ngioedema: Angioedema, including laryngeal edema, may occur especially following the first dose of enalapril. atients should be so advised and fold to report immediately any signs or symptoms suggesting angioedema (swelling face, extremities, eyes, lips, tongue, difficulty in swallowing or breathing) and to take no more drug until they have insulted with the prescribing physician.

ypotension: Patients should be cautioned to report lightheadedness especially during fhe first few days of therapy If tual syncope occurs, fhe patienfs should be told to disconfinue the drug until they have consulted with the prescribing hysician.

l patients should be cautioned fhat excessive perspiration and dehydration may lead to an excessive fall in blood essure because of reduction in fluid volume. Dfher causes of volume depletion such as vomifing or diarrhea may also ad to a fall in blood pressure; patients should be advised to consult with the physician.

yperkalemia: Patients should be told not fo use salf substifufes containing potassium wifhout consulting their ysician.

eutropenia: Patients should be told fo report promptly any indication of infection (e.g., sore throat, fever) which may be ign of neutropenia.

OTE: As with many other drugs, certain advice to patienfs being treated with enalapril is warranted. This information is ended to aid in the safe and effective use of this medication. It is nof a disclosure of all possible adverse or intended ects.

ug Interactions:

ypotension: Patients on Diuretic Therapy: Patients on diuretics and especially those in whom diuretic therapy was cently instituted may occasionally experience an excessive reduction of blood pressure after initiation of therapy with alapril. The possibility of hypotensive effects with enalapril can be minimized by either disconfinuing the diuretic or reasing fhe salt intake prior to initiation of treatment with enalapril. If it is necessary to continue the diuretic, provide se medical supervision after the initial dose for at least two hours and until blood pressure has stabilized for at least an ditional hour. (See WARNINGS and DDSAGE AND ADMINISTRATION.)

ents Causing Renin Release: The antihypertensive effect of VASDTEC is augmented by antihyperfensive agenfs that use renin release (e g., diuretics).

ner Cardiovascular Agents: VASDTEC has been used concomitantly with beta-adrenergic-blocking agents, methylopa, nifrates, calcium-blocking agents, hydralazine, prazosin, and digoxin without evidence of clinically significant verse interactions.

ents Increasing Serum Potassium: VASOTEC attenuates potassium loss caused by thiazide-type diuretics. Potasm-sparing diuretics (e.g., spironolactone, triamterene, or amiloride), potassium supplements, or potassium-conning salt substitutes may lead to significant increases in serum potassium. Therefore, if concomitant use of these ents is indicated because of demonstrated hypokalemia, they should be used with caution and with frequent monitor- of serum potassium. Potassium-sparing agents should generally not be used in patients with heart failure receiving SOTEC.

lium: A few cases of lithium toxicity have been reported in patients receiving concomitant VASDTEC and lithium and e reversible upon disconfinuation of bofh drugs. Although a causal relationship has not been established, if is recomnded that caution be exercised when lithium is used concomitanfly with VASOTEC and serum lithium levels should be nitored frequently.

gnancy—Category C: There was no fetotoxicity or teratogenicity in rats treated with up to 200 mg/kg/day of enalapril 3 times the maximum human dose). Fetotoxicity, expressed as a decrease in average fetal weight, occurred in rats en 1200 mg/kg/day of enalapril but did nof occur when fhese animals were supplemented with saline. Enalapril was terafogenic in rabbits. However, maternal and fetal toxicity occurred in some rabbits at doses of 1 mg/kg/day or re. Saline supplementation prevented the maternal and fetal toxicity seen at doses of 3 and 10 mg/kg/day, but not at mg/kg/day (50 times the maximum human dose).

Radioactivity was found to cross the placenta following administration of labeled enalapril to pregnant hamsters.

There are no adequate and well-controlled studies of enalapril in pregnant women. However, data are available that show enalapril crosses the human placenta. Because the risk of fetal toxicity with the use of ACE inhibitors has not been clearly defined, VASDTEC® (Enalapril Maleate, MSD) should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus

Postmarketing experience with all ACE inhibitors thus far suggests the following with regard to pregnancy outcome. Inadvertent exposure limited to the first frimester of pregnancy has not been reported to affect fetal outcome adversely Fetal exposure during the second and third trimesters of pregnancy has been associated with fetal and neonatal morbidity and morfality

When ACE inhibitors are used during the later stages of pregnancy, there have been reports of hypotension and decreased renal perfusion in the newborn. Dligohydramnios in the mofher has also been reported, presumably representing decreased renal function in the fetus. Infants exposed *in ufero* to ACE inhibitors should be closely observed for hypotension, oliguria, and hyperkalemia. If oliguria occurs, attention should be directed toward support of blood pressure and renal perfusion with the administration of fluids and pressors as appropriate. Problems associated with prematurity such as patent ductus arteriosus have occurred in association with maternal use of ACE inhibitors, but it is not clear whether fhey are related to ACE inhibition, maternal hypertension, or the underlying prematurity.

Nursing Mothers: Milk in lactating rats contains radioacfivity following administration of ^{14}C enalapril maleate. It is not known whether this drug is secreted in human milk. Because many drugs are secreted in human milk, caution should be exercised when VASDTEC is given fo a nursing mother.

Pediatric Use: Safety and effectiveness in children have not been established.

Adverse Reactions: VASOTEC has been evaluated for safety in more than 10,000 patients, including over 1000 patients treated for one year or more. VASDTEC has been found to be generally well folerated in controlled clinical trials involving 2987 patients.

HYPERTENSION: The mosf frequent clinical adverse experiences in controlled trials were: headache (5.2%), dizziness (4.3%), and fatigue (3%).

Dfher adverse experiences occurring in greater than 1% of patients treated with VASDTEC in controlled clinical trials were: diarrhea (1.4%), nausea (1.4%), rash (1.4%), cough (1.3%), orthostatic effects (1.2%), and asthenia (1.1%).

HEART FAILURE. The mosf frequent clinical adverse experiences in both controlled and uncontrolled trials were: dizziness (7.9%), hypotension (6.7%), orthostatic effects (2.2%), syncope (2.2%), cough (2.2%), chest pain (2.1%), and diarrhea (2.1%).

Dfher adverse experiences occurring in greater than 1% of patients treated with VASDTEC in both controlled and uncontrolled clinical trials were: fatigue (1.8%), headache (1.8%), abdominal pain (1.6%), asthenia (1.6%), orthostatic hypotension (1.6%), vertigo (1.6%), angina pectoris (1.5%), nausea (1.3%), vomiting (1.3%), bronchitis (1.3%), dyspnea (1.3%), urinary tract infection (1.3%), rash (1.3%), and myocardial infarcfion (1.2%).

Other serious clinical adverse experiences occurring since the drug was marketed or adverse experiences occurring in 0.5% to 1% of patients with hyperfension or heart failure in clinical trials in order of decreasing severity within each category:

Cardiovascular: Cardiac arrest; myocardial infarction or cerebrovascular accidenf, possibly secondary to excessive hypofension in high-risk patienfs (see WARNINGS, *Hypotension*); cardiac arrest; pulmonary embolism and infarction; rhythm disturbances; atrial fibrillation; palpitation.

Digestive: Ileus, pancreatitis, hepatitis or cholestatic jaundice, melena, anorexia, dyspepsia, constipation, glossitis.

Nervous/Psychiatric: Depression, confusion, ataxia, somnolence, insomnia, nervousness, paresthesia.

Urogenital: Renal failure, oliguria, renal dysfunction (see PRECAUTIONS and DDSAGE AND ADMINISTRATION).

Respiratory: Bronchospasm, rhinorrhea, asthma, upper respiratory infection.

Skin: Herpes zoster, pruritus, alopecia, flushing, photosensitivity.

Dther: Vasculitis, muscle cramps, hyperhidrosis, impotence, blurred vision, taste alteration, tinnitus.

A symptom complex has been reported which may include fever, myalgia, and arfhralgia; an elevated erythrocyte sedimentation rate may be present. Rash or other dermatologic manifestations may occur. These symptoms have disappeared after discontinuation of therapy.

Angioedema: Angioedema has been reported in patients receiving VASOTEC (0.2%). Angioedema associated with laryngeal edema may be fatal. If angioedema of the face, exfremities, lips, tongue, glottis, and/or larynx occurs, treatment with VASDTEC should be discontinued and appropriate therapy instifuted immediately (See WARNINGS.)

Hypotension: In the hypertensive patients, hypotension occurred in 0.9% and syncope occurred in 0.5% of patients following the initial dose or during extended therapy Hypotension or syncope was a cause for discontinuation of therapy in 0.1% of hypertensive patients. In heart failure patients, hypotension occurred in 6.7% and syncope occurred in 2.2% of patients. Hypotension or syncope was a cause for disconfinuation of therapy in 1.9% of patients with heart failure. (See WARNINGS.)

Clinical Laboratory Test Findings:

Serum Electrolytes: Hyperkalemia (see PRECAUTIDNS), hyponafremia

Creatinine, Blood Urea Nitrogen: In controlled clinical trials, minor increases in blood urea nitrogen and serum creatinine, reversible upon disconfinuation of therapy, were observed in about 0.2% of patients with essential hypertension freated with VASDTEC alone. Increases are more likely to occur in patients receiving concomitant diuretics or in patients with renal artery stenosis. (See PRECAUTIDNS.) In patients with heart failure who were also receiving diuretics with or without digifatis, increases in blood urea nitrogen or serum creatinine, usually reversible upon discontinuation of VASOTEC and/or other concomitant diuretic therapy, were observed in about 11% of patients. Increases in blood urea nitrogen or creafinine were a cause for discontinuation in 1.2% of patients.

Hemoglobin and Hematocrit: Small decreases in hemoglobin and hematocrit (mean decreases of approximately 0.3 g % and 1.0 vol %, respectively) occur frequently in either hypertension or heart failure patients treated with VASDTEC but are rarely of clinical importance unless another cause of anemia coexists. In clinical trials, less than 0.1% of patients discontinued therapy due to anemia

Dther (Causal Relationship Unknown): In marketing experience, rare cases ot neutropenia, thrombocytopenia, and bone marrow depression have been reported.

Liver Function Tests: Elevations of liver enzymes and/or serum bilirubin have occurred.

Dosage and Administration: *Hypertension:* In patients who are currently being treated with a diuretic, symptomatic hypotension occasionally may occur following the initial dose of VASDTEC. The diuretic should, if possible, be disconfinued for two to three days before beginning therapy with VASDTEC to reduce the likelihood of hypotension. (See WARNINGS.) If the patient's blood pressure is not controlled with VASOTEC atone, diuretic therapy may be resumed.

If the diuretic cannot be discontinued, an initial dose of 2.5 mg should be used under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and PRECAUTIDNS, *Drug Interactions.*)

The recommended initial dose in patients not on diuretics is 5 mg once a day. Dosage should be adjusted according to blood pressure response. The usual dosage range is 10 to 40 mg per day administered in a single dose or in two divided doses. In some patients freated once daily, the antihypertensive effect may diminish toward the end of the dosing interval. In such patients, an increase in dosage or twice-daily administration should be considered. If blood pressure is not controlled with VASOTEC alone, a diuretic may be added.

Concomitant administration of VASDTEC with potassium supplements, potassium salt subsfifutes, or potassium-sparing diuretics may lead to increases of serum potassium (see PRECAUTIONS).

Dosage Adjustment in Hypertensive Patients with Renal Impairment: The usual dose of enalapril is recommended for patients with a creatinine clearance > 30 mL/min (serum creatinine ot up to approximately 3 mg/dL). For patients with creatinine clearance ≤ 30 mL/min (serum creatinine ≥ 3 mg/dL), the first dose is 2.5 mg once daily. The dosage may be fitrated upward until blood pressure is confrolled or to a maximum of 40 mg daily.

Heart Failure: VASDTEC is indicated as adjunctive therapy with diuretics and digitalis. The recommended starting dose is 2.5 mg once or twice daily. After the initial dose of VASOTEC, the patient should be observed under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and PRECAUTIONS, *Drug Interactions.*) If possible, the dose of the diuretic should be reduced, which may diminish the likelihood of hypotension. The appearance ot hypotension after the initial dose of VASOTEC does not preclude subsequent careful dose fitration wifh the drug, following effective management of the hypotension. The usual therapeutic dosing range for the treatment of heart failure is 5 to 20 mg daily given in two divided doses. The maximum daily dose is 40 mg. Once-daily dosing has been effective in a controlled study, but nearly all patients in this study were given 40 mg, the maximum recommended daily dose, and there has been much more experience with twice-daily dosing. In addition, in a placebo-controlled study which demonsfrated reduced mortality in patients with severe heart failure (NYHA Class IV), patients were treated with 2.5 to 40 mg per day of VASOTEC, almost always administered in two divided doses. (See CLINICAL PHARMACOLOGY, *Pharmacodynamics and Clinical Effects.*) Dosage may be adjusted depending upon clinical or hemodynamic response. (See WARNINGS.)

Dosage Adjustment in Heart Failure Patients with Renal Impairment or Hyponafremia: In heart faiture patients with hyponatremia (serum sodium < 130 mEq/L) or with serum creatinine > 1.6 mg/dL, therapy should be initiated at 2.5 mg daily under close medical supervision. (See DOSAGE AND ADMINISTRATION, *Heart Failure,* WARNINGS, and PRECAUTIONS, *Drug Interactions.*) The dose may be increased to 2.5 mg b.i.d., then 5 mg b.i.d. and higher as needed, usually at intervats of four days or more, if at the time of dosage adjusfment there is not excessive hypotension or significanf deterioration of renal function. The maximum daily dose is 40 mg

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JOURNAL

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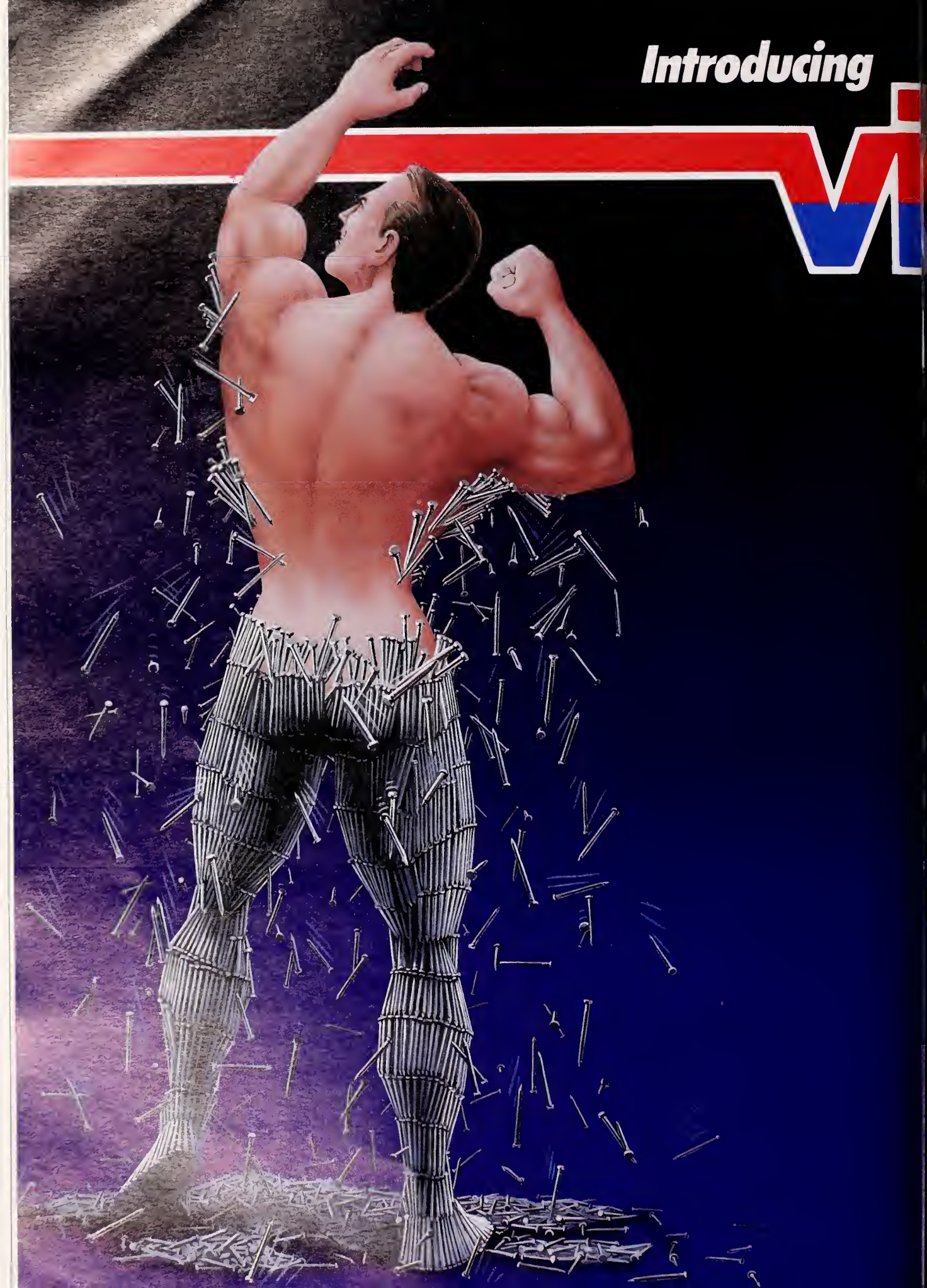
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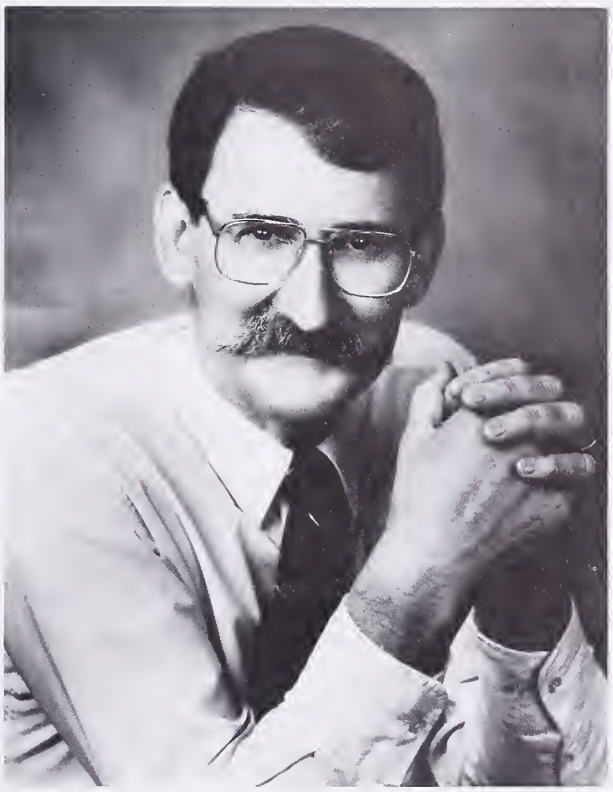

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How's Business, Doc?

This routine, quasi-cheerful greeting from acquaintances is a reminder that few people correctly understand the true physician's relationship to medical practice remuneration. Most patients ask "how's business?" in the same context they would ask the grocer or a salesman, without considering the quite different relationship evinced as the true physician earns a living from a medical practice. Even some physicians, caught up in a daily hustle for money, may forget the unique difference in medicine's pecuniary contract with the sick. Some physicians drift into a pattern of pricing services as if they were selling hot dogs or clothing or jewelry, where more and faster are the signals of success.

Most patients can relate to the physician's need to make a living, but very few people really comprehend the unique blend of personal service, sales, and advice that is the essence of today's scientific medical care. Few people appreciate the significant dependency of medical progress on free market fee-for-service medical economics.

Even experienced medical and business administrators rarely understand the primacy of the personal relationships that energize a successful medical practice. The business schools teach little or nothing about patient/physician relations, and few, if any, parallels to medical practice exist in the commercial world. Business administrators tend to rate medical practices by cash flow trends, or after-tax profits, or perhaps by the number of treatments completed. But these are concept residuals of business school, and are the criteria of commerce, more applicable to a manufacturing project or a commodities sales operation.

The merchant who sells goods can never quite understand the coercive element of fear that the patient brings to the purchase of medical services. The ethical physician's duty to avoid exploitation of this fear is incomprehensible to the vendor or tradesman. Also, a salaried administrator or physician has difficulty in understanding the problems of the practitioner who earns "piecework" fees. The import of private practice volume variability is sometimes baffling to the securely salaried person.

The time-proven values of the medical profession still say that the really successful medical practice is measured by the number or rate of successful interventions of medical art and science into the real health problems of individual patients. The best possible medical care is rendered firstly, and a living is made secondly. True enough, the physician who does it well makes a good living in today's world. But for eternity, the crucial criterion of success of the true physician remains the frequency of the artful application of the truths of medical science to the health problems of an ailing human being. The physician's monetary worth is not measured.

The successful physician practices so that most patient contracts lead to appropriate medical care and a positive effect on the emotional or physical health of the patient.

The current aberrations in medical economics from government meddling have temporarily complicated the physician's remuneration. But in these times, as in all times, and for time immemorial, the good physician is known by the correct use of medical knowledge, and not by the possession of riches.

Ray V. McIntyre, M.D.

At a Crisis Point

It should appear fairly obvious to almost anyone that we are at a true crisis point in American medicine. The problems facing medicine today are the most challenging ever. Our health care system is under increasing criticism, resulting in radical proposals for restructuring.

Congress, the administration, business, and the public are calling for changes in the financing and delivery of health care. A public opinion poll conducted by the Louis Harris organization in early 1989 showed that 89% of the public wanted key health care changes and that 61% of Americans would exchange the US system for Canada's.

The subject of health care and potential plans for solution of the problems were top priority for consideration and discussion at the recent National Conference of State Legislatures which met in Tulsa in August. A major problem seen by the legislators is what to do about the 37 million Americans who are uninsured or underinsured. This group is made up of several different subgroups that range from the truly poor uninsured to the employed uninsured and self-employed underinsured. Many states are considering or have enacted mandated health care coverage provided by employers to all workers and some variation also is being considered by Congress. Small-business leaders point out that this will put many of them out of business and increase the ranks of the unemployed, thereby creating further significant problems.

Many other proposals are out there coming to the surface in the search for a comprehensive solution.

Whatever system or changes are ultimately adopted must be satisfying to some degree to the majority of physicians in order to maintain the high quality care that is in place today. High morale among health care professionals is essential for maintaining high quality of care.

Physicians must play a leadership role, but we must also keep an open mind to the problems of others as we consider not just what is good for the profession but also what is good for the people and our society. We must keep our position of being the number one advocate for our patients at the top of our priority list.

The legislators, on the other hand, must realize that any system that is ultimately adopted will not provide quality care to all Americans and be budget neutral. They also should recognize that a radical restructuring or adoption of a health system from another country could significantly disrupt access to medical care and would not be tolerated by the public or physicians.

Directed Breast Biopsies

Ross Vanhooser, MD, and Dan C. Rhodes, MD

Preoperative needle localization prior to biopsy of nonpalpable mammographic abnormalities is a widely accepted procedure. The experience of the first 100 localizations performed at the University of Oklahoma is reviewed.

The American Cancer Society's recommendations for the detection of breast cancer in its earliest stages include proper timing and interpretation of a mammogram, routine self-examination, and periodic professional physical examination.[1] Although physical examination by the patient and the professional are important, the Breast Cancer Detection Demonstration Project and other studies have shown that the key to finding the smallest cancers is mammography.[2] This increases survival significantly.[3] Although there are some who use a "blind" biopsy technique, most advocate removal of the nonpalpable, suspicious mammographic finding by directed biopsy following needle localization.[4] This tecnhique, combined with specimen radiography, should maximize diagnoses and result in the least amount of trauma to the patient, maintain cosmesis, and yield the highest accuracy.

Our purposes in reviewing the first 100 needle localizations at the University of Oklahoma Breast Screening Center (OUBSC) were to measure our success with the recognized patterns of mammographic abnormalities, determine what abnormalities were occurring in our population, and identify what percentage of abnormalities represented cancer.

Materials and Method

Preoperative needle localizations of nonpalpable mammographic abnormalities were initated at the OUBSC in June 1986 and were performed using the techniques described by Meyer, Homer, Kopans, and Feig.[5-8] The first 100 localizations were conducted from June 1986 to September 1987 on a total of 94 women (6 women had bilateral localizations or 2 localizations in one breast). Information obtained from chart review of clinical files and mammographic reports was summarized for purposes of this study.

All of the patients in this study were examined by a physician at the OUBSC and by a general surgeon. Mammograms were taken by a certified radiological technologist using a dedicated film/screen mammography unit. For purposes of this study, all films were read initially or later reread by Dr Rhodes. Nonpalpable, suspicious mammographic findings were classified and defined as (1) four or more clustered microcalcifications, (2) a noncystic mass measuring at least one centimeter in diameter, (3) an asymmetric density, (4) a focus of architectural distortion (retraction), or (5) any combination of the above. Needle localizations were performed almost exclusively in the OUBSC by Dr Rhodes. The patients were then moved to the place where the directed biopsy was to be done.

In all cases, the localization mammogram was reviewed by the radiologist with the surgeon im-

From the Department of Radiological Sciences, University of Oklahoma Health Sciences Center, Oklahoma City.

Direct correspondence to Dan C. Rhodes, MD, 920 Stanton L. Young Boulevard, Post Office Box 26901, Oklahoma City, OK 73190.

mediately preceding the biopsy. Specimen radiography was obtained in 94 of the 100 cases; lesions that became palpable intraoperatively were not necessarily radiographed. The 14 patients with biopsy-proven malignancies were followed via correspondence with their surgeons and the pathologists, documenting their surgical procedure and axillary node status.

Results

The average age of the patients biopsied in this study was 53.4 years. Sixty of the women with mammographic abnormalities were undergoing their first mammogram, and for the remaining 40 biopsies there was an average of 27.3 months between their previous mammogram and the one which revealed an abnormality.

Evaluation of risk factors in the fourteen patients with biopsy-proven malignancy revealed 10 of the 14 (71%) were aged 50 years or older, 3 (21%) had a family history of breast carcinoma, and 2 (14%) were nulliparous. One patient was age 30 years or older at the time of her first full-term pregnancy. None of the women had a personal history of breast, colonic, or gynecologic carcinoma.

In 55 cases, microcalcifications were the only mammographic abnormality. The number of clustered microcalcifications varied from four to an indeterminant number, with most cases having between 11 and 20 (Table 1). These microcalcifications were clustered over an average two-dimensional area of 1.27 sq cm.

A solitary mass accounted for 15 biopsies and an asymmetric density determined another 15. Nine patients were biopsied due to a mass with microcalcifications and 4 patients had mixed microcalcifications and macrocalcifications. One patient exhibited a mass with microcalcifications and macrocalcifications, and 1 had a focus of architectural distortion. When appropriate, ultrasound was performed to determine cystic versus noncystic nature of the solitary, well-marginated mass. Even when sharply marginated with no other associated findings, the noncystic mass 1 cm or greater in diameter was localized for directed biopsy.

The detected mammographic abnormality occurred in the left breast in 55% of the cases, and 45% occurred in the right breast. The upper-outer quadrant was the most frequent site of the abnormality in either breast, with a fairly even distribution of abnormalities occurring throughout the remainder of the breast (Fig 1).

Table 1. Microcalcifications

No. Clustered or Assoc. Microcalc.	No. Patients
2	1
4	3
5	4
6	6
7	3
8	2
10	7
11-20	25
Indeterminant # > 4	10

A Homer Mammalok needle was used in 84 patients, a Kopans needle in 9, and a hypodermic needle in 1. In all cases the mammographic abnormality was no greater than 1 cm from the path or tip of the localizer (Table 2).

Eighty-nine biopsies were performed by staff and community surgeons and 11 were done by several different surgery residents. The mammographic abnormality was identified in 90% of the specimens radiographed, was not seen in 5%, and in another 5% the biopsy was performed elsewhere. The surgeon chose to get a frozen section reading for 16 biopsies and waited for permanent sections for the other 84.

Carcinoma of the breast was diagnosed in 14% of the biopsies performed using preoperative needle localization of the nonpalpable mammographic abnormalities (Fig 2). Of these diagnoses, 36% were carcinoma in situ. Two patients had positive (1 of 15 and 3 of 15) axillary lymph nodes. All of the carcinomas were of ductal origin. Microcalcifications were involved in 11 of the positive biopsies and a poorly marginated, isolated mass occurred in the other three (Fig 3).

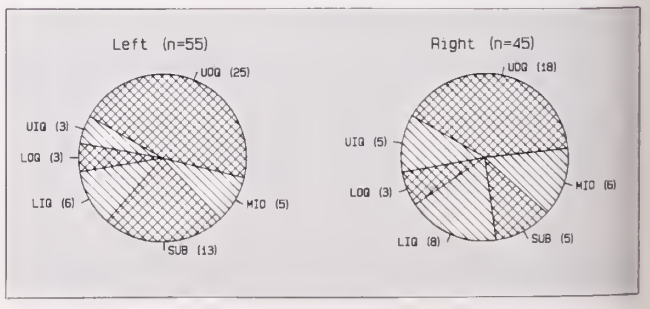

Figure 1. Distribution of Abnormality Location

Table 2. Distance of Tip/Path from Abnormality		
	Distance	
	<0.5 cm	0.5–1.0 cm
Tip (29)	16 (55%)	13 (45%)
Path (71)	50 (70%)	21 (30%)

Discussion

The realization of the value of mammography in the early detection of breast cancer has significantly increased the number of mammograms performed. This, in turn, has led to an increasing number of biopsies, especially in patients with nonpalpable lesions. Undoubtedly, the number of mammograms performed will continue to increase. It is hoped we can learn by our experience and the experience of others to prevent an accompanying increasing number of "needless" biopsies. However, we must ask ourselves, "what is a needless biopsy?" Also, "what is an acceptable positive biopsy rate?"

One could argue that a biopsy would be unnecessary and therefore needless if a lesion that had a very low probability of malignancy were biopsied. We should be more willing to follow such a lesion rather than recommend immediate biopsy. The task of the radiologist is to determine which findings are suspicious and of these suspicious findings, which ones are worrisome enough to merit the recommendation of immediate biopsy and which ones are less worrisome and therefore can be followed. Although we know that the radiologist should not guess histology, surely we can improve our positive biopsy rate by learning from experience. If a lesion has less than a 5% chance of malignancy, it seems reasonable to follow this lesion.[9] On the other hand, we must keep in mind that since it is impossible to determine histology with mammography alone, we must adopt a somewhat aggressive approach if we are to find breast cancer in its earliest stages. There is, we hope, a happy medium.

Conclusion

Our positive biopsy rate of 14% compares favorably (although at the low end of the spectrum) with others.[3,6,10-16] Based on our experience and that of others, it seems a strong case could be made for following asymmetric densities (especially in the absence of suspicious physical findings).[17] Also, we probably should consider follow-up rather than immediate biopsy of the sharply marginated, noncalcified solid mass that is approximately 1 cm in diameter. Tufts New England Medical Center's protocol includes following the well marginated, noncalcified mass less than 1.5 cm in diameter as long as it is stable. In fact, they do not routinely ultrasound these lesions as long as they are stable and remain less than 1.5 cm.[18]

Although there are no established guidelines, we hope that our continued experience will aid us in reaching a satisfactory protocol that will allow us to find early, potentially curable breast cancer and at the same time avoid too many benign biopsies. However, the final decision to biopsy should be based not only on the suspiciousness of the mammographic

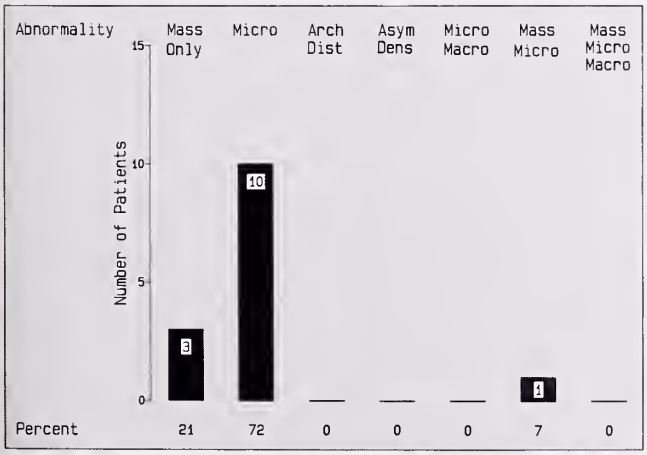

Figure 2. Distribution of Abnormalities

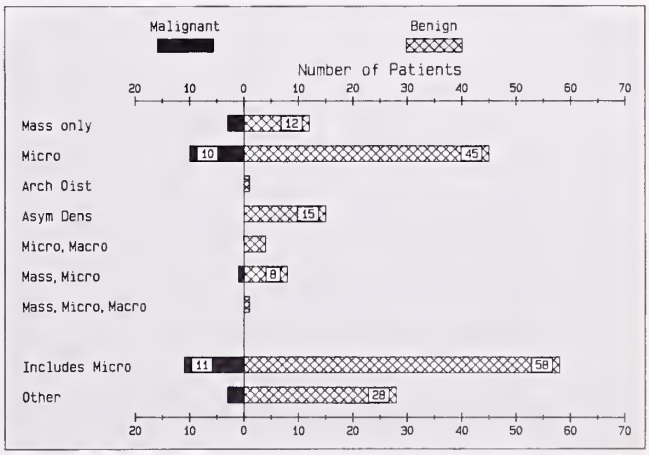

Figure 3. Distribution of Abnormalities by Biopsy Results

abnormality, but also on other factors such as risk, the interpreter's experience, and the patients' wishes.

Acknowledgment
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Coming next month

Manuscripts scheduled for publication in October include an appraisal of the management options for twin pregnancy, a report on nutrition and the rheumatoid hand patient, and a paper on paraquat poisoning.

Transitional Cell Carcinoma Associated with Retrocaval Ureter

K.T. Varma, MD

Retrocaval or circumcaval ureter is itself a rarity. Less than 200 cases have been reported in the literature. Transitional cell carcinoma associated with a retrocaval ureter has not been reported so far.

A 56-year-old white man presented to the office with a clinical history of two episodes of painless hematuria. There were no other urologic symptoms. He had a medical history of recurrent duodenal ulcer, treated medically, mild hypertension, and chronic obstructive pulmonary disease. The patient had been a smoker for the past thirty-odd years and had smoked one to two packs per day. Abdominal examination was unremarkable. Rectal examination revealed a soft,smooth, benign-feeling prostate. Urinalysis showed microhematuria. Multichannel chemistry panel was within normal limits. Intravenous urography revealed typical S-shaped configuration of the right ureter with moderate hydronephrosis and a right ureteral filling defect.

The patient was hospitalized and underwent cystoscopy, right retrograde pyelogram, and right ureteroscopy. Urine was obtained from the right ureter and was sent for cytological examination. The pyelogram confirmed the findings in the intravenous urography study (Fig 1 and 2). A computerized tomography (CT) scan was obtained and clinched the diagnosis of retrocaval ureter (Fig 3). The ureteral tumor also was well documented in the CT scan (Fig 4). The CT scan also demonstrated a questionable retroperitoneal mass effect on the ureter. An inferior venacavogram was performed; it provided further anatomic delineation of the pathology (Fig 5).

The patient was explored by a right lower quadrant oblique incision. The right pelvic ureter was exposed. The ureteric tumor was palpated. The incision was extended to the right flank, facilitating exposure of the right kidney. After freeing up the retrocaval segment of the ureter, an uneventful total nephroureterectomy was done.

Pathological findings were consistent with a grade 2 transitional cell carcinoma with minimal submucosal involvement. The tumor measured 3.5 × 2.7 × 2.3 cm and was located 3.5 cm from the distal margin of the resection. Other pathological diagnosis included small satellite superficial transitional cell carcinoma grade 1 and chronic pyelonephritis.

The postoperative period has been unremarkable.

Comment

This case implies that a retrocaval ureter per se need not be symptomatic. Asymptomatic cases can probably be left alone.

The association of transitional cell carcinoma with retrocaval ureter has not been reported in the literature. Jesse Clemmons et al reported a case of a ureteral tumor, actually a fibroepithelial polyp, associated with a right retrocaval ureter in a duplicated venacaval system.

Ureteroscopic evaluation was less than optimal in this particular situation. A moderate amount of bleeding combined with the smooth glistening ap-

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Figure 1. Intravenous urogram demonstrating typical S-shaped configuration of right ureter with moderate hydronephrosis.

Figure 2. Right retrograde pyelogram shows distal ureteral filling defect.

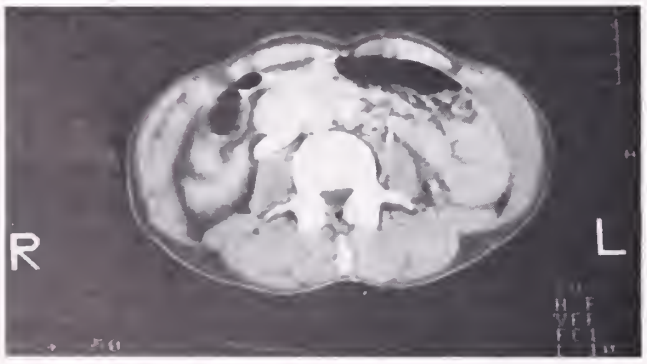

Figure 3. CAT scan illustrates circumcaval relationship of ureter.

Figure 4. CAT scan demonstrates intraluminal mass in right ureter.

Figure 5. Venacavogram and intravenous urogram superimposed to illustrate the relationship.

pearance of the polypoid tumor and also unexplained pulsatility of the lesion precluded biopsying the lesion. The cytology also was not conclusive.

Radiological diagnosis of a retrocaval ureter probably can be well established by a retrograde pyelogram alone. A CT scan clinches the diagnosis. The need for an inferior venacavogram may be avoided.

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Protecting Peer Review Activities

Ed Kelsay

This special report was prepared at the request of the House of Delegates of the Oklahoma State Medical Association.

On May 16, 1988, the United States Supreme Court sent a shockwave through the health care industry and the medical profession when it upheld a $2.2 million judgment against eleven Oregon physicians in the antitrust case of *Patrick vs Burget*. It was alleged that they had utilized the hospital's peer review process in an attempt to eliminate an economic competitor.

The case had an immediate chilling effect on the interest of physicians in participation in peer review where there was even the slightest possibility of an antitrust lawsuit.

The court's decision to uphold the judgment prompted the American Medical Association (AMA) to issue a special report regarding potential liability after the *Patrick* decision. The report stated, "The risk of antitrust liability has always been minimal for physicians who participate in peer review in good faith for the purpose of enhancing quality care, and who follow fair procedures in making peer review decisions."

The major lesson learned from *Patrick* is that peer review cannot be conducted without regard to its competitive consequences and that if it is used in an anti-competitive manner, liability may be imposed on those physicians involved.

Some amount of peer review immunity has been given through the Health Care Quality Improvement Act of 1986. While the immunity is limited, it does offer some protection in antitrust situations. In the absence of an absolute immunity from suit, the preferred course of action should be to minimize the risk of antitrust violations in the peer review process. In the long run this will offer greater security to physicians seeking to avoid such liability, rather than relying solely on immunity under the Health Care Quality Improvement Act. In other words, the peer review activity of the hospital and involved physicians should avoid even the slightest appearance that the activity is for any purpose other than enhancing quality of care.

This can best be accomplished by following the procedures outlined in the Health Care Quality Act. But it should be kept in mind that the immunity of the act can be circumvented if an aggrieved physician alleges that the peer review activity itself was not reasonably taken in furtherance of quality health care and/or that due process, consistent with the rules set out in the act, was not provided to the aggrieved physician. In short, if the peer review activity follows both the words and the spirit of the act, it is defendable, but not completely immune from lawsuit.

The AMA report says, "An antitrust complaint arising from an adverse peer review decision generally alleges that the decision was made in bad faith. That act would not bar the filing of lawsuits with such allegations."

The act itself sets out the rules to be followed in conducting peer review. In 1987, almost simultane-

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ously with the action of the United States Congress, the Oklahoma State Legislature adopted a state law on the subject that was not quite identical to the federal law. Oklahoma's law is found in Sections 24 through 29 of Title 76.

Although the Oklahoma statute specifically says that its protection from liability does not apply to antitrust situations, the nearly identical federal statute does offer limited antitrust protection. Therefore, by abiding by either the Oklahoma or the federal statute, some amount of antitrust liability protection is offered.

Both statutes state that protection shall be available when the professional peer review activity was taken:

1. In reasonable belief that it will maintain or enhance the quality of professional standards of conduct or competence;
2. After reasonable effort to obtain facts pertinent to the matter;
3. After adequate notice and opportunity to be heard are afforded the professional involved; and
4. In reasonable belief that facts warrant the action.

(There is a phraseology difference between the Oklahoma statute and the Health Care Quality Improvement Act of 1986, but the intent is clearly the same.)

The statute goes on to say the notice that is required must:

1. State that a professional review action has been proposed against the professional;
2. Inform the professional, in detail sufficient for him to prepare a defense, of the reasons for the proposed action;
3. State that the professional may request a hearing whether he has been previously contacted about the proposed action or complaint on which it is founded or not;
4. Inform the professional of the time limit of not less than thirty (30) days in which he must request a hearing or lose such right; (*Note:* The state act requires 20 days.)
5. Explain the hearing procedure that will be used or the choice of procedures available for the professional's choice if a hearing is requested; and
6. State that if a choice of hearing procedure is available, the professional must choose at the time he requests the hearing.

The statute then goes on to say that if the affected professional requests a hearing on a timely basis, the professional review body must give the professional notice no less than thirty (30) days before the hearing of the place, time, and date of the hearing, of the witnesses expected to be called against him, and of the exhibits expected to be used against him. (*Note:* The state act requires no less than 10 days notice.)

The Oklahoma statute specifies that the "Professional Review Body," which is defined as a public or private body organized in whole or in part for the purpose of maintaining standards of conduct and competence, may determine how the hearing is to be held. It states, "At the option of the professional review body, the hearing may be held before:

1. An arbitrator mutually acceptable to the professional and professional review body;
2. A hearing officer appointed by the professional review body provided the hearing officer is not in direct economic competition with the affected professional;
3. A panel of individuals appointed by the professional review body provided the individuals are not in direct economic competition with the affected professional; or
4. The entire professional review body."

Although there is a phraseology difference between the state and federal act, it is only minor and the intent is clearly the same.

Both the federal and state statutes set out very specific rights of the professional under review. He or she shall have the right to be represented by legal counsel at any stage of the proceedings, the right to have a record made of the proceedings, and the right to call, examine, and cross examine witnesses. There is also the right to present relevant evidence at the hearings, and to submit a written statement at the conclusion of the hearing and to receive a written statement explaining the action, or decision not to act, of the professional review body.

While there is no way to completely insulate

Both the federal and state statutes set out very specific rights of the professional under review.

physicians or a hospital from an antitrust lawsuit, by following the procedure outlined above and recognizing and honoring the rights delineated, the defendant individual or organization will have some immunity from liability.

It is obvious from the current state of the law and the number of lawsuits nationwide on the subject, that hospitals and physician medical staffs must immediately begin to take any and all peer review activities very seriously. They can no longer be conducted in an offhand or informal manner. Wherever there is the possibility that a peer review action could restrict, limit, or eliminate a physician's right to practice, that activity must be performed with strict adherence to the provisions found in the law and outlined above.

The review must be conducted in good faith and for the purpose of enhancing quality care.

The key provision that activates the statutory protection is that the *review must be conducted in good faith and for the purpose of enhancing quality care*. Any action, activity, or individual that would give even the slightest appearance of having any other purpose should be avoided.

Any physician that is a direct economic competitor of the professional under review, finding themselves sitting on a peer review committee contemplating any action which could restrict that professional's right to practice, should immediately ask that they be excused from service on the committee and that a noneconomic competitor be named to replace them.

In difficult cases, the use of outside consultants might be considered to assist in peer review activities.

All hospital medical staffs are encouraged to review their current medical staff bylaws to make sure their hearing procedures correspond to the requirements of the federal and state law. Special attention should be paid to the notice days required and it is recommended that the federal timing be utilized.

Conclusion

There is no way to render peer review, and the physicians involved in it, immune from possible lawsuit. However, by carefully following the procedures set out in both the state and federal Health Care Quality Act, the liability risk of peer review will be significantly reduced.

The following is a series of one-paragraph "rules of thumb" that physicians and hospitals should observe in the conduct of peer review.

1. The hospital medical staff bylaws should set out in detail the "fair hearing" process to be followed in all peer review situations.

2. The process as set out in the bylaws, especially that portion of the process dealing with notice and timing, should be followed very carefully.

3. No physician should be allowed to serve on a peer review committee if they have had previous contact with the case or situation. This includes, but is not limited to, having acted or interacted professionally on the case, having served on any committee dealing with the case or situation, and, initiating a complaint or serving on the executive committee of the medical staff.

4. In any situation where it appears that a disciplinary proceeding could result in the loss or termination of a physician's hospital privileges, the advice and guidance of legal counsel should be sought immediately.

5. In any case where there is the possibility of a loss or termination of physician privileges, any direct economic competitor of that physician should be excluded from the process. In addition, the physician against whom charges have been made should have the right to challenge any member of the peer review process for anti-competitive reasons, or for any other valid reason.

6. While it is recognized that most peer review committees, especially those in the area of quality of care, prefer to work through medical records review and written reports, any physician whose hospital privileges are in jeopardy should have the right to request and receive a formal hearing. During the hearing the attorneys advising both the peer review process and the physician involved should be accorded reasonable latitude in cross examination. The AMA report recommends, "Substantial latitude should be permitted in the presentation of evidence, medical reference works and testimony, within reasonable time constraints and at the discretion of the hearing panel."

7. While physicians who are direct economic

competitors of the physician involved should not serve on a hearing panel, they may testify as witnesses after being called by either the physician, the hearing panel, the hospital, or the complainant. The AMA report recommends, " . . . A physician should not be deprived of his privileges solely on the basis of medical testimony by economic competitors."

8. All witnesses should be admonished to testify as to the medical standards of the community. A physician testifying as to what he or she would have done under the circumstance is only giving one person's opinion.

9. The hospital medical staff bylaws, in the section dealing with Fair Hearings, should specify that the complainant (peer review committee, credentials committee, etc), will present its case first and then let the physician involved respond to the allegations presented.

10. A record should be made of the entire proceeding. This can be accomplished through the use of a court reporter making a verbatim transcript of the hearing, or by recording the hearing for later transcription should any of the parties request it. The cost should be borne by the hospital.

11. At the conclusion of the hearing the recommendations of the hearing panel should be set out in writing and given to all parties. Usually the Fair Hearing section of the bylaws of the hospital will require that certain "findings of fact" that will support the decision of the hearing panel be set forth in the report.

12. If a peer review committee or panel should find that it cannot conduct a hearing because too many of its members are economic competitors with the physician involved, the hospital should attempt to arrange for nonstaff physicians, having some familiarity with peer review proceedings, to make up a special ad hoc committee for review purposes. The hospital might consider hiring a hearing officer who has some familiarity with the conduct of hearings, the rules regarding introduction of evidence, and some familiarity with the case law pertaining to medical staff disciplinary hearings.

13. The AMA report states, "When investigation indicates that a disciplinary proceeding is warranted for the purpose of terminating a physician's hospital privileges, *he should not be permitted to resign without a finding that his termination occurred without cause.* The disciplinary proceeding should be conducted without cause. The disciplinary proceeding should be conducted by the hearing panel with the presentation of testimony and evidence, irrespective of whether the physician involved chooses not to be present."

The best protection that can be offered to physicians and/or the hospital involved in peer review is that the process be conducted in as fair and impartial a way as possible and that it not be allowed to be used for anticompetitive purposes. Physicians should examine their own motives, and should participate in disciplinary activity only for the purpose of protecting or improving the quality of patient care.

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Treatment of Minors without Parental Consent: The Law in Oklahoma

Donald E. Cohen, MD, JD

Many Oklahoma physicians face the problem of treating minors without parental consent. For them, this review of current Oklahoma law should prove especially useful.

Many physicians frequently find themselves with a patient under the age of 18 years requesting medical services without parental consent. This issue has been addressed by the Oklahoma legislature in 63 Oklahoma statutes, sections 2601-2606. This act outlines the situations in which minors may be treated without parental consent. A review of the provisions of this act would be helpful for physicians practicing in Oklahoma.

The act defines minors as persons under the age of 18 years except those in the active service of the military, who are considered adults. Health professionals covered under this act include all licensed physicians, psychologists, dentists, podiatrists, chiropractors, registered or licensed practical nurses, or physician's assistants. The health services covered under this act include examination, preventative and curative treatment, surgical, hospitalization, and psychological services. Abortion, sterilization, and research not necessary to preserve the life of the minor are not covered by the act.

The right of a minor to give self-consent and the doctor-patient privilege allowed under these circumstances are covered in section 2602 of title 63. Minors who are either married or have their own dependent children, or are emancipated, or are separated from their parent or legal guardian for whatever reason and don't receive support from them are, under the terms of this act, allowed to give self-consent for most medical care with the exception of abortion, sterilization, or life-threatening procedures.

If major surgery, general anesthesia, or life-threatening procedures are contemplated, a physician must get the concurrence of another physician in the community to treat the self-consenting minor unless the situation is an emergency in a community where no other surgeon can be contacted within a reasonable time. A minor also may give self-consent to the undertaking of treatment, diagnosis or prevention of drug, substance, or alcohol abuse.

If a minor is or has been pregnant, a physician may treat, may make a diagnosis, or may offer prevention, provided abortion or sterilization is not utilized. If communicable disease, drug or substance abuse, or pregnancy is involved, the health care provider must offer counseling to the minor.

The act also specifically allows minors who are the parents of children to give consent for the care of their child or their minor spouse if the minor spouse is unable to give consent because of physical or mental incapacity.

Emergency services where the obtaining of consent from the parent or legal guardian of a minor would cause a delay that might threaten the life or health of the minor also may be consented to by the minor. If consent is obtained from the minor under this emergency situation exception, reasonable attempts to inform the parents or legal guardians of

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such treatment must be made by the physician.

The physician is free from any legal claims against him from the parents, spouse, or legal guardian of the otherwise authorized self-consenting minor for any treatment needed or provided under the act, barring negligence or intentional harm. The physician also is protected by the act if the minor falsely represents his circumstance to give self-consent to the extent that liability shall be limited to injury caused by negligence or intentional harm. The minor may not invoke the common law right to revoke or disaffirm his consent due to his minority. The parents or legal guardians of minors consenting to treatment under this act will not be responsible to pay for such services unless they do agree to pay for such care.

Title 63 authorizes numerous exceptions to the requirement of parental consent for medical treatment. Oklahoma physicians should be familiar with its provisions since it affords significant protection for them in treating many categories of minor patients.

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The Author

Donald E. Cohen, MD, JD, is a resident in family medicine at the University of Oklahoma Health Sciences Center. He earned his medical degree at Mount Sinai School of Medicine of City University of New York and his JD from Oklahoma City University School of Law.

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News from
the Oklahoma State
Department of Health

Childhood Drownings

Drowning is the second leading cause of death for Oklahoma's children ages 0 to 19 years, with only motor vehicle crashes claiming more young lives. In addition, it is estimated that at least twice as many children are victims of near-drowning as those who suffer fatal injuries.

Increasing public and professional awareness of the problem is essential to prevention. When it comes to educating parents and family members as well as other caregivers about the problem of childhood submersions, physicians can play an essential role. A few minutes of anticipatory guidance and counseling on drowning prevention could mean the difference between life and death for a child.

Parents and the public need to know that *any* body of water constitutes a potentially fatal environment for children. Young children can drown in only a few inches of water, such as in a bathtub, toilet, bucket or pail, or even a puddle. In Oklahoma, half of the injuries reported in children under age 5 occurred in swimming pools. In children age 5 and over, more than two-thirds of the injuries occurred in recreational water (lake, river, etc).

The most common thread found in submersion incidents is a lapse in supervision by the caregiver, if only for a moment. Prevention must include an emphasis on constant visual supervision of children. However, the combination of fallible adults and curious children is bound to result in momentary lapses of attention. For this reason, prevention must also encompass other strategies including complete barriers around pools with self-closing, self-latching gates. Fences should be five feet high with vertical openings no greater than four inches wide. In addition, all exits from the home to the pool should be self-closing and self-latching with locks at least five feet from the ground. Other preventive measures include pool alarms, draining the pool in the "off" season, and use of personal flotation devices, especially in recreational waters.

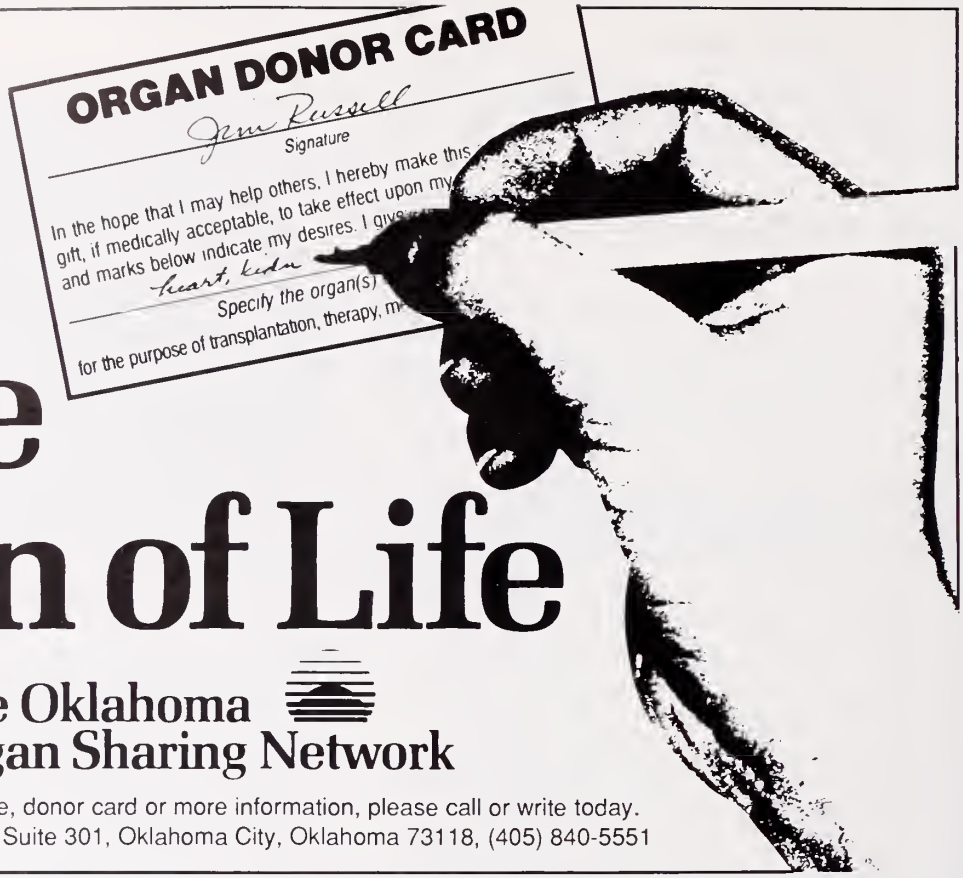
For more information about childhood drownings, contact the Pediatrics Division, (405) 271-4471, or the Injury Epidemiology Division, (405) 271-3430.

DISEASE	Monthly Reporting Period Ending 6/30/89	TOTAL TO DATE		
		This Year	Last Year	5 Yr. Avg.
ACQUIRED IMMUNE DEFICIENCY SYNDROME	12	74	65	7
CAMPYLOBACTER INFECTIONS	31	96	80	113
CHLAMYDIA INFECTIONS	300	1,425	1,219	#
ENCEPHALITIS, INFECTIOUS	0	7	6	11
GIARDIA INFECTIONS	14	80	75	91
GONORRHEA (Use ODH Form 228)	506	3,178	3,571	5,283
HAEMOPHILUS INFLUENZAE INVASIVE DISEASE	10	91	116	114
HEPATITIS A	39	200	276	219
HEPATITIS B	24	97	97	106
HEPATITIS, NON-A NON-B	2	16	25	30
HEPATITIS UNSPECIFIED	7	16	19	32
HUMAN IMMUNODEFICIENCY VIRUS INFECTIONS	38	285	*	*
MENINGITIS, BACTERIAL (non-meningococcal, non H. Influenzae)	11	73	10	28
MENINGOCOCCAL INFECTIONS	2	13	13	19
MUMPS	9	166	194	—
PERTUSSIS	4	13	25	84
RABIES (Animal)	11	54	22	42
ROCKY MOUNTAIN SPOTTED FEVER	11	19	33	46
SALMONELLA INFECTIONS	38	166	142	165
SHIGELLA INFECTIONS	10	60	64	84
SYPHILIS (Use ODH Form 228)	11	51	85	89
TUBERCULOSIS	22	106	103	120
TULAREMIA	2	6	9	8

#Made Reportable in 1985 —Made Reportable in 1987 *Made Reportable in 1988

Injuries	Total to Date This Year	Fatalities No. (%)
BURN	328	62 (19)
TRAUMATIC SPINAL CORD INJ	48	15 (31)
DROWNING/ NEAR DROWNING	42	33 (79)

Diseases of Low Frequency	Total to Date This Year
AMEBIASIS	0
BRUCELLOSIS	3
LEGIONNAIRES' DISEASE	13
MALARIA	4
MEASLES (RUBEOLA)	107
REYE SYNDROME	1
RUBELLA	1
TETANUS	0
TOXIC SHOCK SYNDROME	10
TYPHOID FEVER	1



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Funds for research center

Biomedical and Health Care Ethics Program wins grant

A $99,000 grant has been awarded to the University of Oklahoma Health Sciences Center (OUHSC) in Oklahoma City by the Presbyterian Health Foundation. The grant will help support the OU Health Sciences Center's Biomedical and Health Care Ethics Program for two years, according to program director Dr Richard A. Wright.

"We are extremely grateful to the Presbyterian Health Foundation for this support of our program," Wright said. "The grant will allow us to significantly enhance and expand the program, enabling us to become a well-rounded regional resource center for health care ethics."

Specifically, the grant will assist in the development of a research center to be housed in the OUHSC library, provide for faculty development in the field of biomedical and health care ethics, and fund a series of conferences to be held on campus, Wright said.

The Biomedical and Health Care Ethics Program began full-time operation in January 1989, using funding from internal sources and a grant from the Kellogg Foundation. Wright said the gift from the Presbyterian Health Foundation will allow for major expansion in the program's research center, and assistance with ethics research. As a result, health care providers and others interested in health care will be able to research basic ethics literature on a wide range of topics.

Major conferences focusing on biomedical and health care ethics will be supported by the grant, Wright said. Each of the major colleges at the OU Health Sciences Center in Oklahoma City and Tulsa is expected to sponsor one conference in each of the next two years to stimulate interest in specific areas of research which might be developed and expanded by the college community.

The conferences will be open to both the university community and the general public, Wright said, and will be designed to attract nationally known experts and speakers.

The grant also will allow some OU Health Sciences Center faculty members to attend two types of programs offered by the Kennedy Institute for Bioethics at Georgetown University in Washington, DC — a Visiting Scholars Program and a 10-day intensive course in bioethics. Both programs are aimed at health care professionals and serve to introduce them, through intense study and research, to the issues and areas of biomedical ethics.

Announcement

American Medical Association
Hospital Medical Staff Section
Fourteenth Assembly Meeting
November 30 - December 4, 1989

Medical Staffs from across the country are encouraged to elect a medical staff representative to participate in the AMA-HMSS Assembly meeting November 30 - December 4, 1989 at the Sheraton Waikiki Hotel in Honolulu.

The HMSS Assembly provides medical staffs with a unique opportunity to discuss and participate in the policymaking process of the AMA. In addition to the Assembly Meeting, the HMSS will sponsor an educational program on a topic of interest to medical staffs.

For further information about the AMA-HMSS, please call (312) 645-4754 or 645-4761.

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Immunotherapy effective

Insect sting allergies far more common than once believed

The prevalence of potentially dangerous allergies to bee and wasp stings may be 5 to 10 times higher than previously estimated, says a recent study.

Among 269 workers at an industrial plant, researchers found that 3.3% had systemic reactions when challenged by skin tests using bee and yellow jacket venom, report the authors, David B. K. Golden, MD, of the Johns Hopkins University School of Medicine, Baltimore, and colleagues.

Laboratory and skin tests showed that 26.5% had allergy-causing antibodies to at least one of the venoms, and even among those who reported no history of allergic reactions to stings, 15% reacted positively to skin tests, the authors report. While the clinical significance of asymptomatic sensitivity is unclear, the authors point out that most fatal sting reactions occur in people who had never experienced an allergic sting reaction.

Hypersensitivity reactions to hymenoptera (bees, wasps, ants, and related insects) stings can be effectively prevented by venom immunotherapy, the authors say. However, the treatment is recommended for patients judged to be at greatest risk for potentially fatal systemic reactions to stings — namely those with a history of previous systemic reactions as well as positive results on allergy tests for hymenoptera venom. Since many severe or even fatal sting reactions are the first sign of the disease, the authors say better diagnosis is required for selecting patients who need potentially life-saving immunotherapy.

"It is now clear that allergic sensitization after a sting is quite common," occurring in more than 30% of all who are stung, they report. But for many, sensitization is not permanent. The data show that only about half of initially sensitized individuals are still sensitized more than three years after the sting. Many venom-sensitive patients develop only large local sting reactions, and even among those with a history of systemic reactions, only 40% to 60% will have a systemic reaction from a deliberate sting challenge. Systemic reactions may involve the skin away from the sting site, respiration, and blood vessels, leading to potentially fatal shock, they say. "The actual risk of a systemic sting reaction in persons with asymptomatic venom sensitivity is unknown but of great importance, because we have found that 15% of subjects with no history of systemic or large local sting reactions have a positive venom skin test."

The authors urge caution in extending their results to the general population. Nevertheless, they say their study strongly suggests that the incidence of insect venom allergies is much higher than previously thought. "None of our subjects with systemic reactions had sought medical attention or advice from their physicians," they point out. "In fact, they all refused our advice to enter venom immunotherapy. Obviously, those individuals who present for medical evaluation of insect sting allergy represent only the tip of the iceberg. This situation might be improved by a public education effort to increase awareness of the frequency, prognosis, and preventability of this disease."

The report appears in the July 14 issue of the *Journal of the American Medical Association (JAMA).*

Thurman Shuller, MD, McAlester pediatrician, enjoys a recent retirement and recognition dinner in his hometown. For his many years of dedication and service in the medical profession, Dr Shuller was presented a 50-year pin by OSMA Executive Director David Bickham. Dr Shuller becomes the second member of his family to earn such recognition; his brother, E.H. Shuller, MD, received a 50-year pin ten years ago.

DEATHS

Howard Choice Martin, MD
1904 - 1989

OSMA Life Member Howard C. Martin, MD, died Sunday, July 23, 1989, in Oklahoma City. The retired general practitioner was born in Sherman, Tex, and graduated from the University of Oklahoma School of Medicine in 1929. After a two-year internship in Los Angeles, he returned to Oklahoma City for private practice. He served on active duty with the US Army for 5½ years during World War II and with the US Air Force for 21 months during the Korean conflict.

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Two enzymes may provide valid prognosis in heart attack victim

The amount of two enzymes in the cerebrospinal fluid (CSF) may provide an accurate indication of the chances of recovery for victims of cardiac arrest, says a study in July's *Archives of Neurology.*

"Prognostic assessment of brain injury after cardiopulmonary resuscitation is essential for proper selection of patients (for) intensive care with limited resources," write the authors, Risto O. Roine, MD, of the University Central Hospital, Helsinki, Finland, and colleagues.

The enzymes, creatine kinase isozyme (CK-BB) and neuron-specific enolase (NSE), accumulate in the cerebrospinal fluid following damage to the brain. The CSF levels of these enzymes were measured in 75 consecutive victims of out-of-hospital cardiac arrest.

"All patients with a CSF neuron-specific enolase level of more than 24 nanogram/milliliter 24 hours after cardiac arrest remained unconscious and died," they report. In addition, levels of NSE and CK-BB in the patients' CSF correlated very well with their neurological outcome three months following resuscitation.

"This study suggests that the recovery of consciousness and survival of cardiac arrest victims can be predicted reliably by the measurement of NSE or CK-BB in CSF 24 hours after resuscitation," they conclude.

Study recommends immediate reconstruction after mastectomy

A study in July's *Archives of Surgery* "enthusiastically" recommends immediate breast reconstruction after mastectomy for breast cancer.

The authors, Craig H. Johnson, MD, and colleagues at the Mayo Clinic, Rochester, Minn, report the outcomes in 118 women at their institution who, between 1980 and 1986, underwent breast reconstruction immediately following removal of their cancerous breasts. Immediate insertion of a breast prothesis avoids the costs, risks, and discomfort of a second operation, they report. Also important is the avoidance of much of the psychological damage that results from mastectomy.

"The five-year survival of 81% for patients in this immediate reconstruction population compared favorably with the 87% five-year survival at our institution following modified radical mastectomy alone," they report.

There has been some concern that breast implants may hide the recurrence of cancer; however, the authors say that the various types of commercially available silicone implants that were used did not prevent early detection in the seven patients who experienced local recurrence of cancer.

"In the absence of any apparent negative impact on patient outcome, and because of the well-documented positive psychosocial benefit of immediate reconstruction, this procedure should be routinely offered to women with operable breast cancer," they conclude.

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Legislature created instant eye doctors, says OKC ophthalmologist

To the Editor: I agree with and laud Dr Brickner's comments published in the July JOURNAL ["Who's in Charge Here Anyway?"] concerning the legislature's action demanding heroic measures in caring for terminally ill patients. However, his statement that this is the first incursion of the legislature into the practice of medicine is incorrect.

About six years ago the legislature in their great wisdom decreed that optometrists who would take a short crash pharmacy course could treat eye diseases, thereby making them instant "eye doctors." Optometrists have reveled in this newfound upgrading, by legislature fiat, of their non-medical profession. It seems that everyone wants a piece of the medical pie, but they don't want to go to medical school.

Unfortunately we are now seeing the results of this misguided legislation in increased suffering, unnecessary visual loss, and blindness in patients whose eye diseases have been incorrectly diagnosed and treated by "eye doctors" who have had no medical training.

—E. Norris Robertson, Jr., MD
Oklahoma City

Reader appreciates editor's "voice crying in the wilderness"

To the Editor: The editorial ["How Much Is a Physician Worth?"] in the July 1989, Vol 82, issue of the *Journal of the Oklahoma State Medical Association* prompts this letter.

I wish to congratulate you on an excellent piece of writing. The style, message, logic, and reason are outstanding. As I reread the editorial several times, I realized that I hadn't given adequate thought to the entire subject. Certainly this editorial motivated me to think deeply and searchingly on my own feelings and attitudes toward fees and services. I'm sure at times you will feel like a "voice crying in the wilderness," but I want you to know that I'm in your corner. There will be times when you will catch some flack, but please be strengthened by the fact that many of us appreciate the thought and time you give to this service.

—John A. Blaschke, MD
Oklahoma City

BOOK SHOP

Archaeological Insights into the Custer Battle: An Assessment of the 1984 Field Season. By Dr Douglas D. Scott and Richard A. Fox, Jr., Norman: University of Oklahoma Press, 1987. 138 pages with profuse maps, photographs and illustrations, index and bibliography, price $9.95 paperback.

When Lt Col George Armstrong Custer and his crack Seventh Cavalry rode over the divide into the Little Big Horn river valley of Montana, they rode squarely into the pantheon of American Folklore. Scant hours after crossing the divide, alongside the river with the poetic Indian name Greasy Grass, Custer and five companies lay scattered, thoroughly dead and dismembered. The badly shot up remnants of his regiment grimly held out a few miles south, cut off from water.

The "what happened" in the hundred plus years since the Red Sunday of June 25th, 1876, has produced an immense body of literature. The swirling controversy over Custer's orders and tactics, and the movements of the five companies who disappeared with him, shows no signs of diminishing. An impressive volume of books and articles continues to flow forth. Views and opinions range from the profound to the ridiculous. For example, every November a legend sweeps the Nebraska prairie that Custer's last words were "Boomer Sooner." It has been said that more ink has been spilled than cavalry blood.

Into all of this heat now comes the light of an absolutely first rate scientific archaeological study. A very fortuitous prairie fire, perhaps the last best thing those of us who persist in smoking have done, laid bare a field choked with the tall, tough buffalo grass of decades. To its lasting credit the National Park Service recognized a golden opportunity and conducted an artifact survey while the grass still smoldered. Enough surface artifacts were found to justify a full blown study.

Dr Douglas Scott of the National Park Service's Midwest Archaeological Center and Richard Fox, a Montana archaeologist and battlefield student, assembled a dedicated and enthusiastic team of carefully screened volunteers. An ably managed "shotgun marriage" of the professional and the often suspiciously regarded amateur metal detector operator conducted a meticulous and carefully grid-mapped sweep. Over four thousand artifacts were found. Some surprising and well-documented conclusions were made possible.

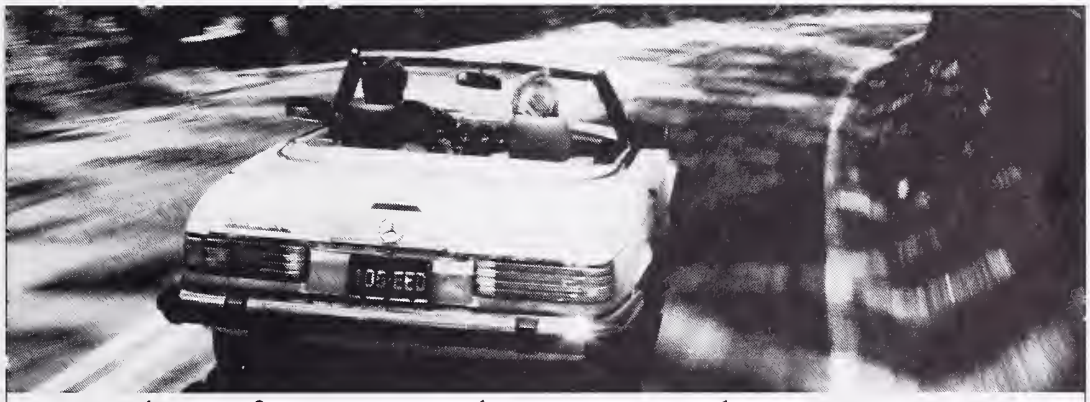
It is now clear that Custer was outgunned in quantity if not in quality. There was at least one repeating rifle on the Indian side for every single-shot armed cavalryman. Clear military and Indian firing positions emerged. Since shell casings and bullets have markings often as telltale as a fingerprint, the movements of a particular weapon in Indian hands could in some cases be traced.

Enough human remains, including a nearly complete skeleton, were recovered to make some dramatic conclusions. The skeletal remains were analyzed by the eminent Oklahoma forensic pathologist, Dr Clyde C. Snow.

Following an excellent general overview and historical background by Richard Fox, Dr Scott gives us a fascinating picture of the methodology of the archaeologist. This includes a richly illustrated section on the analysis of the artifacts with an emphasis on weapons, shell casings, and bullets. The section on firearms was written with the aid of Mr Dick Harmon, a noted expert on Indian Wars period firearms.

The authors are well entitled to their preliminary conclusions of "what happened." The conclusions are based on computer-generated, detailed maps of weapons artifacts as to position and vector. This battlefield patterns analysis is very likely to have set a standard for methodology for future study. Some brief vignettes of unknown soldiers based on artifacts and bones are particularly riveting and poignant.

From the standpoint of this reviewer, the best is yet to come. The site of the field hospital for the



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surviving part of the Seventh Cavalry has been discovered. A very brave and skillful contract surgeon, Dr Henry R. Porter, incredibly managed to save fifty-seven of the sixty wounded. Porter alone of three medical officers survived. With the wildest good luck, the shards of a chloroform bottle and the amputated leg of an Irish cavalry hero straight out of a John Wayne western may be discovered.

Dr Scott's conclusions are consistently supported and enhanced by reference to the more prestigious and standard Custer literature. This was no small chore itself. Diagnosis: A must for the Custer buff and Westerner, a first rate weapons study for the hunter and gun collector, a good introduction to archaeology for the scientifically inclined, and a fascinating evening's diversion for all.

—James W. Wengert, MD
Omaha, Neb

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(continued on p 484)

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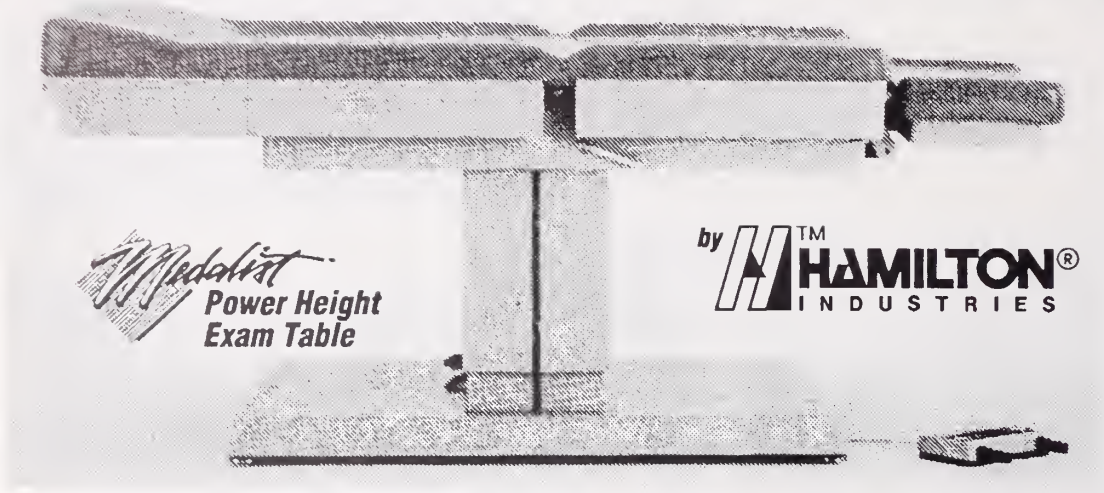

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Associate Surgeon, Department of Cardiovascular & Thoracic Surgery, Centinela Hospital Medical Center, Los Angeles

Major, U.S. Army Reserve

EDUCATION Rensselaer Polytechnic Institute, Troy, NY, B.S. Chemistry; NYU School of Medicine, New York, M.D.

RESIDENCY Boston University School of Medicine (Cardiovascular); Saint Vincent's and St. Claire's Hospitals, New York City (General Surgery)

FELLOWSHIP First Mary A. Fraley Cardiovascular Surgical Research Fellow at the Texas Heart Institute, Houston

OUTSTANDING ACHIEVEMENTS Author of numerous articles, including "Indications for Early Bypass Grafting Following Intracoronary Streptokinase"; author of "The Female Surgeon—Dawn of a New Era," chapter in *A Century of Black Surgeons—The U.S.A. Experience*; Board of Directors, Association of Black Cardiologists; Secretary, Drew Society

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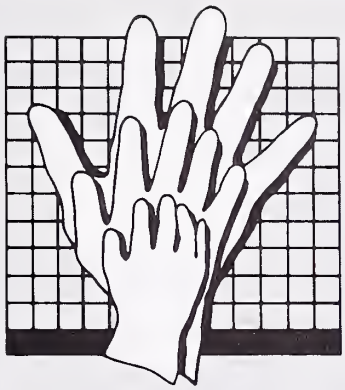

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Articles submitted for publication, including Annual Meeting papers, become the sole property of the JOURNAL and must not have been published elsewhere. The Editorial Board reserves the right to edit any material submitted. Manuscripts must be typewritten, double-spaced, and submitted in duplicate. Receipt of manuscripts will be acknowledged, and unpublished manuscripts will be returned. The JOURNAL does not assume responsibility for the statements or opinions of any contributor.

Style

All manuscripts should adhere to the style adopted by the American Medical Association as illustrated in *JAMA* and detailed in the AMA's *Manual for Authors & Editors*. Footnotes, bibliographies, and legends for illustrations should be typewritten, double-spaced, on separate sheets. References are to be listed in the order of their appearance in the article.

Illustrations

Illustrations other than the author's will not be accepted for publication unless accompanied by written permission from the original source. Illustrations should be labeled with the author's name and must be numbered in the order in which they are referred to in the article. The quality of all illustrations must be in keeping with the quality of the magazine.

News

Readers are encouraged to submit news items of interest to Oklahoma physicians. Where dates of meetings, etc, are important, please remember that each issue closes on the first day of the *preceding* month and reaches subscribers in the latter half of the month of publication.

Reprints

Authors will receive reprint order forms from the Transcript Press, 222 East Eufaula, Norman, Oklahoma 73069, prior to publication of their articles. Other requests for reprints must be made to the Transcript Press within 30 days after publication.

Back Issues

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Physician Partners

As we celebrate the centennial of the "Run of '89" your auxiliary, the Oklahoma State Medical Association Auxiliary, accepts the challenges of the next 100 years with enthusiasm and faith. Think of the changes made in the practice of medicine over the past 100 years, and try to imagine what the next century will bring.

As the demands of government erode the relationship of physician to patient, we, as physician partners, must continue to keep ourselves informed so that we can communicate to the public the issues concerning health care.

As a physician's partner, we hope membership in auxiliary is the answer for you. It is the only organization in which physicians' spouses join together to address specific concerns and problems unique to the medical family.

Auxilians can be effective and extremely helpful in several areas, some of which are listed as follows:

Health Projects. Our county auxiliaries continually educate their communities concerning AIDS, teen pregnancy, cholesterol screening, adolescent health, substance abuse, and the importance of exercise for good health, to name a few. The Health Education Foundation provides a grant to counties to help fund a health project each year.

AMA-ERF. As government and other sources of funding cease, the auxiliary support of American Medical Association-Education Research Foundation becomes even more critical. Contributions to medical schools for research and low-interest loans to deserving medical students are necessary. Medicine must continue to attract the brightest minds for the future of medical excellence.

Health Education. The auxiliary will always promote health education through projects at the national, state, and county level. This year the national Health Projects Committee has set as their goal that every county have at least one health project. They provide pamphlets, videos, and an Information and Resource Coordinator at national headquarters for our benefit. The OSMAA Health Education Foundation awards the Anne Garrison Scholarship to an outstanding nursing student each year. It also will provide grants to counties and state for health education projects.

Legislation. Medicine Day at the Capitol has been an effective tool for physicians and their spouses to meet with their legislators and express their opinions in person. This year, Legislative Chairman Sherry Strebel has planned two Political Education Seminars, one in Oklahoma City, March 7, 1990, and one in Tulsa, March 8, 1990. She also is urging each county to spend a day at the legislature to become better acquainted with their legislators. Membership in OMPAC-AMPAC is always important, but now more than ever.

Membership. We cannot accomplish any of our goals without *you*, the physician spouse as a member of auxiliary. You are our most important concern. We offer many opportunities for personal development, peer support, gratification in the knowledge we have helped others as well as ourselves regarding health issues, and along the way, fun and friendship. Once again Oklahoma has shown the nation our wonderful spirit and what team effort means through the recent Olympic Festival celebration. "Unity" is American Medical Association Auxiliary President Jean Hill's theme, and mine is "Always a Team Effort." Hopefully our messages will encourage every spouse to join with us to accept the challenges facing medicine and bring about the solutions needed to keep the practice of medicine free.

—Maureen Bynum
President

■ **Photographers in the Oklahoma State Medical** Association (OSMA) are invited to submit copies of their best prints or slides for possible use on the JOURNAL's cover. Prints may be either black-and-white or color and should be at least 5″ × 7″; vertical formats are preferred. The photographer's name and address should be clearly marked to assure proper credit; submissions will be kept on file and *cannot be returned*. Titles, information about the subject matter, and technical notes are also desirable. Send submissions to the OSMA JOURNAL, 601 Northwest Expressway, Oklahoma City, OK 73118.

■ **Human immunodeficiency virus (HIV) antigen** testing will not be put into effect at this time for donors at the Oklahoma Blood Institute (OBI), says Director Ronald O. Gilcher, MD. The OBI was one of 24 centers participating in a nationwide study conducted by the National Institutes of Health. The study found that of approximately 250,000 donors in the US tested between January and April 1989, none were HIV antigen positive who were not also HIV antibody (ELISA) positive. Subsequently, the Food and Drug Administration (FDA) Blood Advisory Committee announced it does not support testing blood donors for the HIV antigen at this time. In the spring issue of *Heartbeat,* published by the OBI, Dr Gilcher explained, "There is concern that individuals at risk for HIV would target blood centers doing HIV antigen testing in order to have a 'free' test performed and this could further jeopardize the safety of the blood supply." He said the testing would not be put into effect at OBI unless the study finds confirmed positive donors.

■ **A free "Retinal Screening Program" will be** held bimonthly at St. Anthony Hospital in Oklahoma City. The program is for any diabetic who has not seen an ophthalmologist in the past year. In addition, diabetes education classes are held monthly. For information and appointments, call (405) 272-7102.

■ **The Oklahoma Department of Mental Health** has been renamed the Department of Mental Health and Substance Abuse Services. "Well over 20% of admissions for treatment in Oklahoma's mental health care facilities are for drug and alcohol abuse," said Don Anderson, interim commissioner, in the spring issue of the department's publication, *Focus.* "Substance abuse is preventable and treatment is effective. The new name is certainly more descriptive of our overall responsibilities and the increased focus we are placing upon substance abuse prevention and treatment." The name change became effective July 1.

■ **The OSMA and the OSMA Auxiliary will** co-host a political education seminar for physicians next spring. One session is to be conducted Wednesday, March 7, in Oklahoma City. A second is scheduled Thursday, March 8, in Tulsa. Each will run approximately 8 AM to 4 PM and is expected to accommodate 25 to 50 registrants. Additional details will be announced as they become available.

■ **Oklahoma ranks first in the percentage of** women physicians belonging to the American Medical Association (AMA), according to the AMA's Department of Women in Organized Medicine. The department is sponsoring a "Women in Medicine Recruitment Month" in September, in cooperation with the AMA's Division of Membership. According to the July 14 issue of *American Medical News,* 22 state and county societies contacted 5,800 nonmember women in a similar effort last year. Participating societies realized 1% to 16% increases in women members.

■ **American Academy of Family Practice (AAFP)** President-Elect Kenneth Whittington, MD, Oklahoma City, testified this summer before a subcommittee of the House of Agriculture Committee in Washington, DC. On behalf of the academy, he emphasized the close relationship between rural health care and the well-being of rural communities. He urged Congress to eliminate the urban-rural payment differential and to provide the option of cost-based reimbursement under Medicare. He also called for use of a resource-based relative value scale (RBRVS) for reforming Medicare physician payment, but warned against the inclusion of geographic and specialty differentials, which have been particularly hard on rural communities.

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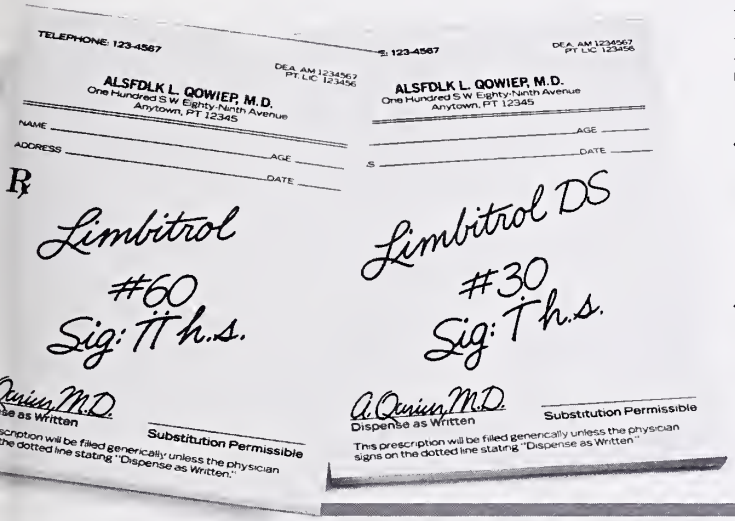

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ecautions: Use cautiously in patients with a history of seizures, in hyperthyroid patients, se on thyroid medication, patients with impaired renal or hepatic function. Because of suicidal ation in depressed patients, do not permit easy access to large quantities of drug. Periodic liver ction tests and blood counts recommended during prolonged treatment. Amitriptyline may ck action of guanethidine or similar antihypertensives. When tricyclic antidepressants are d concomitantly with cimetidine (Tagamet), clinically significant effects have been reported olving delayed elimination and increasing steady-state concentrations of the tricyclic drugs. e of Limbitrol with other psychotropic drugs has not been evaluated; sedative effects may be litive. Discontinue several days before surgery. Limit concomitant administration of ECT to ential treatment. See Warnings for precautions about pregnancy. Should not be taken during nursing period or by children under 12. In elderly and debilitated, limit to smallest effective age to preclude ataxia, oversedation, confusion or anticholinergic effects. Inform patients to sult physician before increasing dose or abruptly discontinuing this drug.

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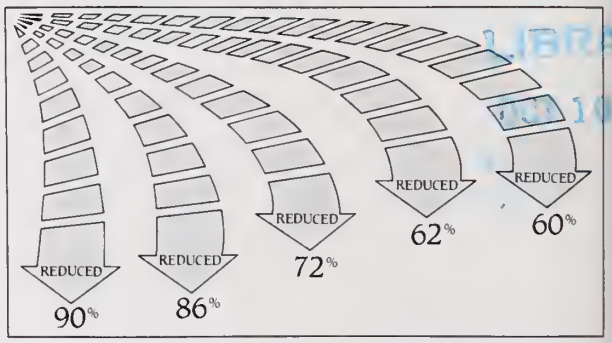

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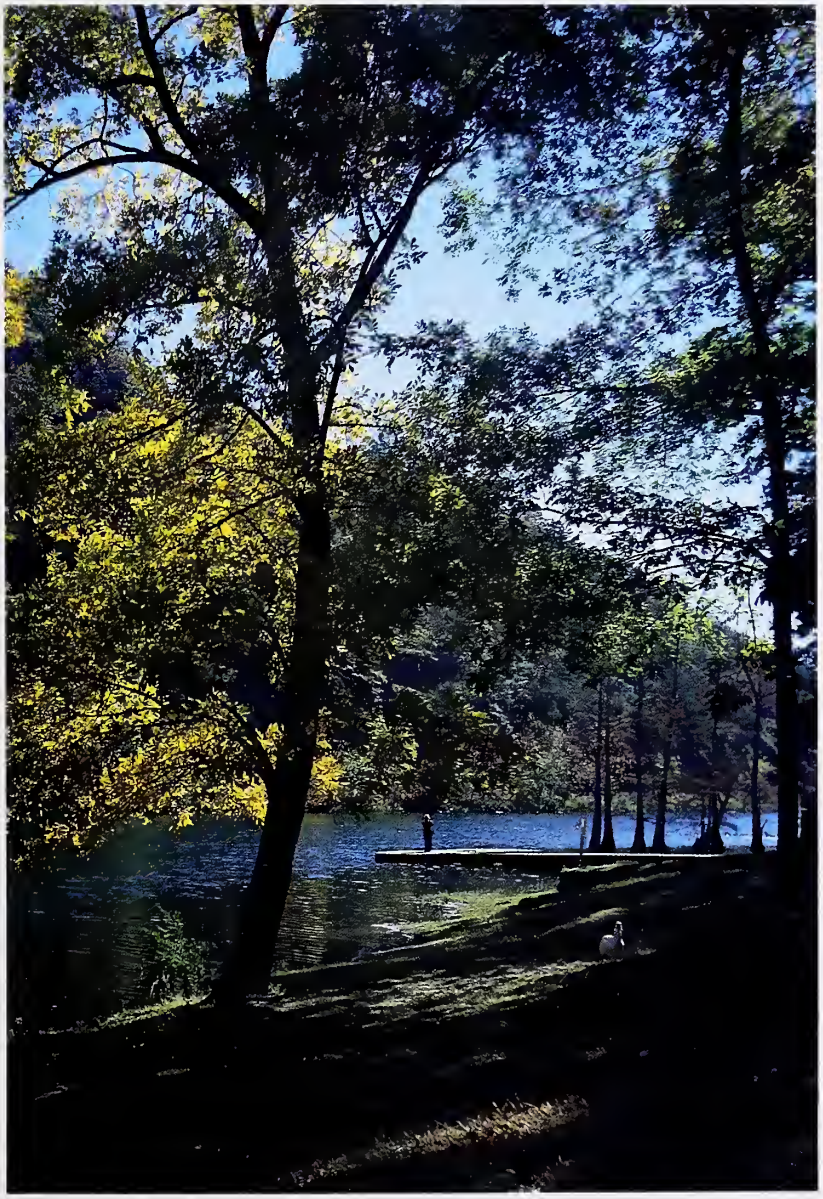
OCTOBER 1989



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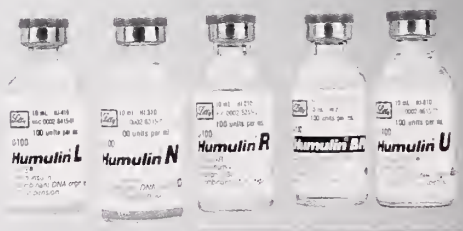

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Any Good Pilots in Here?

There is a perennial debate among physicians about the proper role of advertising in a professional career. When rational professional licensing laws proliferated in the late nineteenth century, advertising by professionals became considerably restricted through ethical strictures. The unlicensed practitioner virtually disappeared. Recently, however, the issue has been rejoined on a new plane since the Federal Trade Commission has banned sanctions that are triggered by a professional's advertising practices. Now any advertising that is not "false and deceptive" is permissible and many not be constrained by ethical canons promulgated by professional associations.

Medicine has a unique perspective on professional advertising that devolves from its unique pecuniary contract with patients and its self-imposed nonexploitation ethic.

Also, the health care purchaser is not free in the same sense that an auto purchaser or a grocery buyer has a wide choice of places and prices and qualities.

Many patients are unable to choose or to change physician or facility because of insurance contracts or geographic unavailability. A stricken traveler away from home has no real choice, and either goes or is taken by a third party to a geographically determined facility. Human nature being as it is, advertising or marketing efforts that are directed toward a population without real choice can only create dissatisfaction.

In today's world, the potential patients to be persuaded by advertising are restricted to a shrinking group of nearby local citizens who have indemnity insurance contracts, no insurance, or can pay cash. This diminishing group of patients has a range of susceptibilities to advertising, depending on whether the choice is precipitated by an urgent, life-threatening condition such as a heart attack, a less urgent condition such as a peptic ulcer, a postponable surgery such as a hernia, or a "vanity" surgery such as liposuction. The patient choices range from virtually none to nearly unlimited across a wide spectrum of clinical conditions. Practically speaking, the patients who can respond to advertising are few, and their opportunities to choose change are rare.

Regardless of numbers, there is a widespread perception among the general populace that the top quality physicians "don't have to advertise," and thus *any* advertisement by a professional sends a negative message on quality to those holding this perception.

Another problem for the physician selected primarily by advertising is the unrealistic expectations most patients bring to the patient/physician contract. Slightly overstated, the patient's desired medical result is: to live forever, with the strength and beauty of youth, free of pain, full of energy — and fully potent. Advertising is interpreted by patients as an implied promise to fulfill some of these elemental fantasies. Bitterness and anger may result from the failure of fantasy fulfillment.

The presence of this common health fantasy explains one of the differences between physician advertising and other advertising. Unreal expectations may be a problem for any advertiser, but with the attorney, or supermarket, or engineer, the customer's fantasies do not include the threat of body invasion or self-identity change as they often do in medical patients.

To select a physician from the sparse data and uncheckable credentials in a TV or newspaper ad is comparable to going to a skid row bar to recruit a charter airplane pilot for a flight into the Amazon jungle. In this life some decisions require facts and data of a higher and more reliable order, and most rational patients know that.

In the cosmic order of things, the principle benefit of medical advertising is to the media business that sells it.

Ray V. McIntyre, M.D.

Cost Sharing Responsibility

As I write this month's editorial, we are preparing to meet with Senator David Boren and AMA President James Sammons, MD, in Washington in an attempt to have some effect on what Congress does this year in altering medicare reimbursement for physicians. Whatever plan or method is ultimately adopted, the patient must have some responsibility in the process.

Methods of health care financing always seem to be out of focus to some degree. A few years ago when I first entered practice, health insurance stressed inpatient care and had very little, if any, coverage for outpatient care and procedures. We had to work hard to keep patients out of the hospital, because they had become accustomed to going there for their routine diagnostic evaluations and such in order to save money. This was obviously the wrong approach, as most in primary care specialties recognized. We did little to change it until Medicare and the "follow-along" health insurance industry ultimately recognized the error and now has done a complete reversal.

The most recent erroneous trend has been providing as much coverage as possible for employees as part of their benefit packages. Employees have come to expect a "free ticket," with little or no co-payment, deductible, or active participation in the payment of their premiums.

The angry response this year over the Medicare catastrophic coverage legislation enacted by Congress last year is an example of what we have come to expect. A major element in this legislation is its cost-sharing feature. The feature got little attention when it was being debated and considered by Congress. However, once the provision started affecting the beneficiaries/taxpayers, protests began to pour into Washington and to all members of Congress. Many of the protests over this issue have been quite emotional as individuals vented their frustrations over the added costs to them.

Another recent example of what we have come to expect is the recent strike by Bell telephone workers. Most major employers are beginning to feel the crunch of escalating health care costs and are calling for changes in the system. This attempt to have employees share in the cost and, hopefully, in the control of the volume of utilization, was met with anger and protest leading to strike and further negotiation.

Cost-sharing is the major issue and will need to be a major component of any system adopted to finance health care if we are to have some rational and logical control of the volume provided. The patient must accept some of the responsibility and share in the decision-making with the physician. Today the issue is Medicare financing, but in the near future it will be a major issue for the private sector. Major US companies have reached the limit of what they can spend on health care and still remain competitive in the international marketplace, as has been revealed by Lee Iacocca and the $700 to $800 per automobile produced cost to Chrysler for health care benefits for employees. Chrysler and other corporations are watching Congress and the developments there, because what ultimately develops will affect us for years to come.

Nutrition and the Rheumatoid Hand Patient

G.M. Rayan, MD: S.T. McCormack, MD; D.J. Hoelzer, MD; R.T. Schultz, MD

The incidence of nutritional depletion in 40 rheumatoid patients and the factors that influence these patients' nutritional status were investigated. More than half of the patients (52.5%) were found to be nutritionally deficient.

Malnutrition in the surgical patient is often an unrecognized problem.[1] Adequate nutrition is essential for preventing complications in the surgical patient. The patient who is at high nutritional risk is more susceptible to infections.[2] Iatrogenic nutritional depletion may occur due to the stress of diagnostic and therapeutic procedures or semistarvation in the hospitalized patient prior to surgery. The trauma of surgery may increase the patient's nutritional needs.

Rheumatoid arthritis patients are often borderline or nutritionally compromised.[3] They may have mineral;[4] vitamin B, C, or D deficiency;[5-7] or metabolic bone disease such as osteomalacia[8] and osteoporosis.[9] Anorexia and gastric upsets secondary to anti-inflammatory medications, difficulty in eating and preparing food, and a relatively poor economic situation all tend to increase the deficiency problem of these patients. Rheumatoid patients also were reported to have abnormal cell-mediated immunity.[10] A correlation was found between positive skin reaction (hypersensitivity) and the concentration of serum albumin, suggesting an association between the nutritional status of rheumatoid patients and delayed cutaneous hypersensitivity.[11] The overall incidence of primary wound healing failure postoperatively was significantly greater in patients with rheumatoid arthritis compared to controls.[12]

The purpose of this retrospective study was to investigate the incidence of nutritional depletion in rheumatoid patients and to compare the various factors that influence these patients' nutritional status, including previous reconstructive hand and upper extremity surgery.

Material and Methods

Forty patients who were diagnosed to have classic or definite rheumatoid disease, according to the diagnostic criteria of the American Rheumatism Association, were the subject of this study. They were originally treated at the University of Oklahoma Health Sciences Center (OUHSC). All were personally interviewed at the hand clinic at OUHSC. Twenty-five were men and 15 were women. The age range was 37 to 77 years with a mean of 59 years.

The patients were divided into two groups. Group I consisted of 20 patients who did not have any upper extremity or hand surgery, and Group II consisted of 20 patients who underwent a variety of reconstructive upper extremity and hand surgery. The first 20 patients seen in the clinic from each group were included in this study. No patients were excluded nor were any selections made. The patients also were classified according to age, rheumatoid factor (RF),

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This paper was read at the World Congress of the International College of Surgeons, Milan, Italy, July 1988.

steroid intake, duration of the disease, progression of the disease, and functional capacity.

Patient evaluation included medical history and previous upper extremity surgery. Social history included residential status, eating (without caloric intake record), and food preparation habits. The nutritional data consisted of anthropometric measurements of height, weight, triceps skinfold (TSF), and midarm circumference (MAC). Biochemical testing consisted of hematologic studies including hematocrit, hemoglobin, white blood cell (WBC) count, total lymphocyte count, serum triglycerides, cholesterol, protein, and albumin levels.

Triceps skinfold was measured using Lange calipers, taking the average of three readings at the midarm. The midarm muscle circumference (MAMC) was calculated using the standard formula,[13] MAMC = MAC − TSF. Standard values of TSF thickness and MAMC were based on generally accepted survey criteria;[14] weight for height and sex standards were adopted from Metropolitan Life Insurance data.[15] The ideal body weight was assumed to be the midpoint of the medium-frame weight range. In an attempt to ojectively estimate a patient's likelihood of being malnourished, two anthropometric and two biochemical parameters were used: TSF, MAMC, total lymphocyte count, and serum albumin. Only patients with abnormal tests in two or more of the four parameters were considered malnourished.

Established criteria for substandard categories of the anthropometric measurements are not available. Hence, arbitrary levels were established based on previous studies where MAMC and TSF values of less than 90% of standard were considered deficient.[16-18] A serum albumin concentration of less than 3.5 g/dl was considered deficient; this value is the lower limit of our laboratory's normal range. Also, a total lymphocyte count less than 1200/cu mm was considered deficient.[19]

Table 1. Mean and Standard Deviation of Six Parameters, Comparing No-Surgery and Surgery Groups

	Group I (No Surgery) M & SD	Group II (Surgery) M & SD
# Patients	20	20
Age	60.9±9.7	57.1±12
MF	16:4	9:11
PS	2.9±0.64	3.1±0.55
FC	2.15±0.37	2.35±0.49
Duration	9.9±7.14	17.05±7.8
Steroids	8 patients	11 patients

M = mean
SD = standard deviation
M:F = male/female
PS = progressive stage
FC = functional capacity

Table 2. Number of Meals in Men vs Women

# of Meals a Day	Men	Women
2 or less	14 (56%)	8 (54%)
3 or more	11 (44%)	7 (46%)

Table 3. Distribution of Men and Women in the Various Levels of Progressional Stage and Functional Capacity

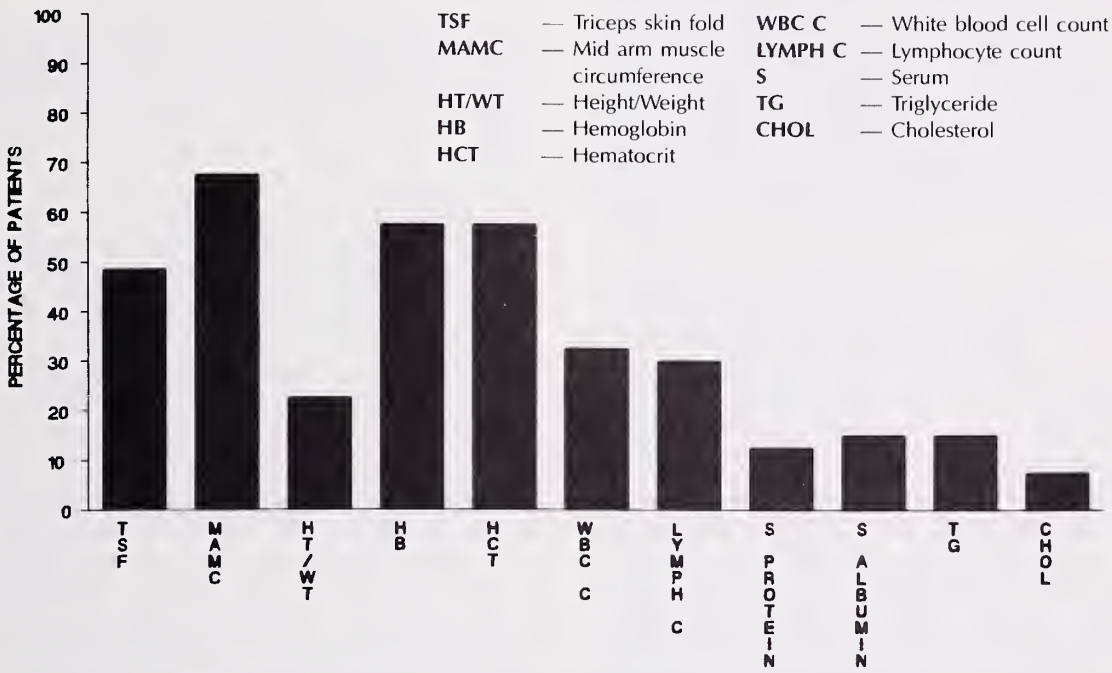
	Progressional Stage		Functional Capacity	
Level	Men	Women	Men	Women
2	6	1	21	9
3	17	9	4	6
4	2	5	—	—

Results

The two groups, I and II, were well-matched statistically for age, progressive stage, functional capacity level, and steroid intake. However, they were different in the ratio of male to female as well as in the duration of the disease (Table 1). Analysis of the social histories revealed the majority of the women (80%) prepared their own meals, whereas the majority of the men (80%) had their spouses or someone else prepare their meals. The men and women essentially had the same intake (Table 2). The surgical procedures performed on patients in Group II consisted of, in order of frequency, resection implant arthroplasty of the metacarpophalangeal joints, PIP and DIP joint arthrodesis, wrist arthrodeis, synovectomies, excision of rheumatoid nodule (always done with other procedures), and carpal tunnel release. In addition, less common procedures such as total elbow and shoulder arthroplasties were performed. All patients were taking medications at the time of evaluation. About 30 different medications were taken by the patients. The most common was prednisone (18 patients), hydroxychloroquine (15 patients), aspirin (11 patients), ibuprofen (9 patients), gold (7 patients), and antacids (7 patients).

Criteria for determination of progression of rheumatoid arthritis and of functional capacity, according to the American Rheumatism Associa-

Figure. Percentage of Abnormal Anthropometric and Biochemical Data of 40 Rheumatoid Patients



tion,[20] were used to classify the patients. The patient population fell into three of four classes or progressional stages (PS), namely 2, 3, and 4. Seven patients were in class 2, 7 patients were in class 4, and 26 were in class 3. None were in class 1. The patient population also fell into two of four stages of functional capacity (FC) in regards to their ambulatory status. Thirty patients fell into stage 2 and 10 fell into stage 3. None fell into stage 1 or 4. The number of patients who had surgery increased with the advance of PS. Twenty-eight percent of patients in PS class 2 had had previous surgery, 53.8% of patients in PS class 3 had had surgery, and 57% of patients in class 4 had had surgery. The percentage of women compared with men increased progressively with the progressional stage (stage 1 = 14%, stage 2 = 35%, and stage 3 = 71%). Also, the percentage of women increased with the functional capacity level (stage 1 = 30% and stage 2 = 60%) (Table 3).

Anthropometric evaluation revealed 27 patients (67.6%) had abnormal MAMC. Twenty patients (50%) had abnormal TSF, and 9 patients (22.5%) had abnormal height/weight ratio. Biochemical evaluation revealed 23 patients (57.5%) had abnormal hemoglobin/hematocrit levels. Thirteen patients (32.5%) had abnormal WBC count, and 12 patients (30%) had abnormal total lymphocyte count. Serum albumin and triglyceride levels were abnormal in 6 patients (15%). Serum protein was abnormal in 5 patients (12.5%), and serum cholesterol was abnormal in 3 patients (7.5%) (Fig).

Based on the criteria previously mentioned, 21 of 40 patients studied (52.5%) were nutritionally deficient. Fifteen of 20 patients (75%) who never had surgery were nutritionally deficient, whereas only 6 of 20 patients (30% who had previous upper extremity or hand surgery were nutritionally deficient (Significant at $P = 0.004$) (Tables 4 and 5).

Of the 20 patients who had surgery, 55% had had one or two surgeries, and 45% had had three or more surgeries. The majority of patients who did not have any surgery (80%) were men.

Table 4. Normal and Abnormal Values of Four Parameters Used to Determine the Likelihood of Malnutrition

	TSF		MAMC		SA		TLC	
Group	N	A	N	A	N	A	N	A
I	9	11	3	17	17	3	12	8
II	11	9	10	10	17	3	16	4

TSF = triceps skin fold
MAMC = midarm muscle circumference
N = normal
SA = serum albumin
TLC = total lymphocyte count
A = abnormal

Table 5. Nutritional Status of Patients in Group I (No Surgery) and Group II (Surgery)

Group	Normal	Abnormal
I	5	15
II	14	6

Group I = did not have surgery
Group II = had previous upper extremity surgery

Twenty-nine patients (72.5%) were seropositive for RF. The majority of positive RF patients (62.5%) were men. The majority of patients with positive RF (62%) were in PS class 3, while the majority of positive RF patients (72%) were in FC Stage 2. There was a tendency for patients with positive RF to be nutritionally deficient. Sixteen of 29 patients (55%) with positive RF were nutritionally deficient, whereas only 3 of 11 patients (27%) who were negative RF were nutritionally deficient.

Nine patients (22.5%) were below the age of 50 years, and 31 patients (77.5%) were above the age of 50 years. There was a clear tendency for increased nutritional deficiency with increase in age. Three of 9 patients (33%) below 50 years of age were nutritionally deficient, whereas 16 of 31 patients (52%) above 50 years of age were nutritionally deficient. Four of 6 patients (66.6%) who were above the age of 70 years were nutritionally deficient. Age did not seem to have a relationship to the FC or PS groups, ie, older patients did not fall into higher groups. The majority of patients fell into PS class 3 in both age groups. This is perhaps because the age of onset was variable.

The average duration of disease was 13.5 years. The duration of disease was less than 15 years in 26 patients (65%), while 14 patients (35%) had disease of more than 15 years' duration. There was a tendency for patients with long-duration disease to be nutritionally deficient compared to those with short-duration disease. Ten of 26 patients (38%) who had short-duration disease were nutritionally deficient, whereas 9 of 14 patients (64%) who had long-duration disease were nutritionally deficient. There were more patients with long-duration than short-duration disease in the advanced FC group. Fifteen percent of the patients who had short-duration disease were in FC stage 3, whereas 43% with long-duration disease were in FC stage 3. Also, 11% of the patients with short-duration disease were in PS 3, whereas 29% with long-duration disease were in group PS class 4.

Patients who were taking steroids were found to have slightly less nutritional deficiency than patients who were not taking steroids. Eight of 18 patients (44%) who were taking steroids were nutritionally deficient, whereas 11 of 22 patients (50%) who were not taking steroids were nutritionally deficient. This, however, was not statistically significant.

Discussion

Nutritional evaluation in this study was based on two anthropometric measurements, namely TSF, which reflects the body fat, and MAMC, which reflects the skeletal muscle mass. In addition, two biochemical parameters were used, namely total lymphocyte count, which reflects the hematopoietic-immune system, and serum albumin, which reflects the visceral protein and correlates with the incidence of protein-calorie malnutrition.[1,21] Weight for height is not a reliable anthropometric measurement, because edematous wrists are often present in rheumatoid patients, and wrist circumference is used to classify patients as to frame size. In this group of 40 patients, abnormal TSF and MAMC were twice as common as abnormal height/weight ratio. The most common abnormality in the biochemical evaluation was the hemoglobin/hematocrit level, while the least common abnormality was the serum cholesterol level.

The two groups studied (surgical versus nonsurgical) are very comparable and conclusions regarding nutritional assessment are statistically valid. Malnutrition by itself in a rheumatoid patient is not an indication for surgery. Also, surgery itself does not improve the nutritional status of a patient directly, but the improvement of the patient's symptoms of difficulty in using the hands and upper extremities allows them to care better for themselves during activities of daily living, including food preparation, eating, and hygiene. Another positive influence is pain relief, which lessens the need for anti-inflammatory medications and hence eliminates the side effects associated with them, such as gastric upsets and anorexia. Patients with positive RF tend to have advanced disease process compared to negative RF patients. This was manifested by the increased incidence of positive RF patients in higher progressional and functional capacity stages.

The rheumatoid disease process was found to be more progressive in women than men. This was manifested by a higher number of women in the surgical group and by the gender distribution in the functional capacity and progressional stage groups. Nutritional intake of men and women in this study was approximately the same and therefore, has no

bearing on the gender ratio in the surgical versus nonsurgical groups.

A relationship was found between duration of the disease on one side and FC and PS on the other side. Patients with longer-duration disease tend to have advanced disease processes reflected by their increased percentage in higher FC and PS groups. Although there was no relationship between age and FC or PS, the number of patients who had had surgery increased progressively with the advance of PS.

The following factors appeared to influence the nutritional status of patients with rheumatoid disease:

- **Age:** Nutritional deficiency tends to increase with age. Patients above 70 years of age were found very susceptible.
- **Duration:** Nutritional deficiency increased with the duration of the disease.
- **Rheumatoid Factor:** Seropositive rheumatoid patients tend to have more nutritional deficiency than seronegative patients.
- **Steroids:** There was a tendency, without statistical significance, for patients who were taking steroids to have slightly less nutritional deficiency than patients not taking steroids.
- **Surgery:** Patients who had had reconstructive hand and upper extremity surgery were found to have significantly less ($P = 0.004$) nutritional deficiency than patients who had never had surgery.

In conclusion, rheumatoid arthritic patients in general, and especially those who had never had reconstructive upper extremity surgery, seropositive patients, patients with long-term disease, and older patients are susceptible to nutritional deficiency. Rheumatoid patients undergoing hand or upper extremity surgery must have nutritional assessment preoperatively. Those who are nutritionally deficient or who have abnormality in any of the biochemical parameters, especially serum albumin and lymphocyte count, should be given nutritional support preoperatively.

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Paraquat Poisoning

Henry M. Allen, DO; Lawrence V. Deck, MD

The authors present a review of the toxicology, pathophysiology, and treatment of paraquat, a potent herbicide.

Paraquat (1,1′-dimethyl-4, 4′-bipyridylium) was first synthesized in the nineteenth century and used by chemists as an oxidation-reduction indicator dye known as methyl viologen. However, it was not discovered until 1955 that paraquat had herbicidal properties. Since that time, it has gained worldwide usage as a potent herbicide. Table 1 lists some of the current products that contain paraquat and its somewhat less toxic sister, diaquat. In this article we will discuss the toxicology, pathophysiology, and current trends in the treatment of paraquat poisoning.

Toxicology

Paraquat is a reddish-brown liquid that resembles root beer or cola. Gastrointestinal absorption after oral ingestion is approximately 5% to 10% of the oral dose.[1-3] Percutaneous absorption also can occur, especially through abraded skin.[4-7] Smoking paraquat-contaminated marijuana usually results in minimal absorption. When smoked, approximately 60% to 70% of the paraquat in the marijuana is convered to bypyridine (a respiratory irritant), 1% remains in the ash, and only about 0.03% is present in the smoke.[8] Preliminary data on agricultural workers who have been exposed to low doses of paraquat for prolonged periods while spraying the herbicide show reduced mid-expiratory flow rate and vital capacity with an impaired carbon monoxide diffusing[8] capacity. In animal studies,[9] it has been shown that inhalation of paraquat aerosols causes an extensive exudation of fluid in the alveoli but no evidence of pulmonary fibrosis. If sprayed directly into the eyes, paraquat can lead to severe conjunctival and corneal lesions.[10,11]

The metabolism of paraquat is unknown but is thought to be minimal. It is water soluble, poorly protein bound,[12,13] and primarily excreted, unchanged, by glomerular filtration and renal tubular secretion, with minimal renal tubular reabsorption.[3,14,15]

Several studies[16-21] have shown that there is considerable accumulation of the paraquat in the kidney, lungs, liver, adrenals, brain, and heart. These same studies revealed that the paraquat is rapidly cleared from the blood and accumulates in these tissues. Diaquat, however, seems to accumulate to a significant degree only in the kidney.[20]

Pathophysiology

The two main potential problems with paraquat are the production of superoxide radicals and the induction of DNA damage.[22]

It has been proposed by a number of studies[23-26] that the possible mechanism of paraquat toxicity in human beings is that, in the presence of reduced nicotanamide adenine dinucleotide phosphate (NADPH), paraquat can be reduced in a one-electron transfer process by microsomal NADPH-cytochrome reductase. Paraquat oxidation is coupled with the

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reduction of molecular oxygen, resulting in the formation of superoxide anion, singlet oxygen, and possible hydroxyl radicals. The hydroperoxide radicals then maintain the formation of new fatty acid radicals while being converted to lipid peroxides in a chain reaction.

Lipid peroxidation is destructive to cell structure and function by damaging mitochondrial, microsomal organelles and other elements. It is postulated[23-26] that the measuring of malodialdehyde formation is a conventional procedure for monitoring lipid peroxidation and hence confirming that paraquat causes lipid peroxidation. However, in one study by Kurisaki,[27] there was no elevation of malodialdehyde in the tissues of either humans or rats that had ingested paraquat, suggesting either that paraquat does not cause lipid peroxidation or that malodialdehyde formation is not a good indicator of lipid peroxidation.

It has been shown there are several enzymes present in the cell that catabolize the superoxide radicals and reduce the lipid hydroperoxides to less toxic alcohols. The superoxide anions are converted to H_2O_2 and O_2 by superoxide dismutase, and the H_2O_2 is further inactivated to water and oxygen by the enzyme catalase. The reduction of lipid peroxides by glutathione peroxidase requires reduced glutathione. Redetzki and associates[28] have shown that the availability of sufficient NADPH is a critical factor for the detoxification process, since the reduction of oxidized glutathione is coupled with the oxidation of NADPH through glutathione reductase. Because of this proposed mechanism, it is believed that paraquat poisoning probably causes a reduction in the threshold for oxygen toxicity.[29-31]

Thompson and Patrick[32] demonstrated that paraquat also can stimulate the release of collagen-stimulating factors from the lungs and thus promote the development of pulmonary fibrosis. If these factors could be blocked at the point of stimulation or release, pulmonary fibrosis secondary to paraquat poisoning could be reduced or eliminated.

Ross and associates[22] demonstrated that paraquat has the potential to cause significant DNA damage in the form of strand breaks. This suggests the potential of birth defects in the offspring or the development of cancer.

Table 1. Products That Contain Paraquat and Diaquat

Product	Active Ingredient	% of Content
Granoxone	paraquat	29.1
Paraquat Plus	paraquat	29.1
Ortho Paraquat CL	paraquat	29.1
Ortho Paraquat	paraquat	29.1
Ortho Spot Weed and Grass Killer	paraquat	3.6
Diaquat Herbicide Concentrate, Ortho	diaquat	35.3
Diaquat Water Weed Killer, Ortho	diaquat	35.3
Diaquat 2-Spray, Ortho	diaquat	35.3
Weed Killer Concentrate, Ortho	diaquat	35.3
Weedtrine D	diaquat	8.53
Weed and Grass Killer, Dexol	diaquat	0.23
Frank's Weed and Grass Killer	diaquat	0.23
Scotty's Weed and Grass Killer	diaquat	0.23

Treatment

Treatment, as with most poisonings, must begin as quickly as possible. Treatment is divided into three stages: (1) prevent absorption, (2) promote excretion, and (3) prevent toxic effects. Occasionally a fourth stage is added to address long-term needs, eg, lung transplantation.

The prognosis of paraquat poisoning patients is difficult to assess early on, particularly with respect to the final outcome of the process. It has been found that one of the best prognostic indicators of survival is the blood paraquat levels in the first twenty-four hours.[33-35] Proudfoot et al[33] were among the first to develop a survival curve. They found that there was a 50% chance of survival if the blood paraquat levels were less than 2.0 ug/ml, 0.3 ug/ml, 0.16 ug/ml, and 0.1 ug/ml at 4, 10, 16, and 24 hours respectively after paraquat poisoning. Utilizing data from 218 patients, Hart et al[34] developed a more elaborate graph for predicting the outcome with paraquat poisoning. Figure 1 is the Hart et al[34] survival curve. The 50% probability curve of Hart et al[34] correlates well with the line of separating survival from death provided by Proudfoot et al.[33]

The key to treatment of most poisonings is the prevention of absorption. There have been reports of even a mouthful being fatal, even though it was immediately spit out.[36] Mourin et al[37] reported a man who rolled a cigarette for himself without washing paraquat off his hands first; he ultimately died as a result. Although these are unusual cases, they demonstrate that the best way to prevent absorption is proper handling. Paraquat should *never* be stored in a soda bottle, and users should thoroughly bathe after each usage.

Since paraquat has poor gastrointestinal absorption,[1-3] emesis, nasogastric lavage, and paraquat-binding substances should be effective if used early. Paraquat in itself can act as a strong emetic.[16] When spontaneous vomiting is absent, ipecac syrup is a good first-line therapy, ideally given prior to reaching the hospital. It has been shown that emesis is more effective in emptying the stomach than gastric lavage.[38-40] However, if gastric lavage is necessary, it should be performed until the lavage solution is clear and odor free.[16,41]

The most commonly recommended intestinal absorbent clay material in paraquat poisoning is Fullers earth or bentonite.[12,16,42-44]

Vale et al[42] and Covalli[45] demonstrated that Fullers earth is probably superior to bentonite because it can be used as a 30% suspension, whereas bentonite swells in water and can only be used in a 6% to 7.5% suspension. The recommended method of administration is to add 300 gm of Fullers earth and 50 gm of magnesium sulfate (employed to enhance the rate of elimination) and then dilute to one liter with sterile water. This suspension is then administered as 250 ml to 500 ml every two to four hours for two to three days (or until paraquat cannot be detected in the blood and urine) via a nasogastric tube.[12,14,16,42,46,47] In a study by Gaudreault et al,[48] it was found that activated charcoal was as effective as Fullers earth in absorbing paraquat. They also noted that when a slurry of activated charcoal and magnesium citrate was used, there was a significant increase in the survival rate of paraquat-treated animals.

The second stage of treatment is aimed at promoting excretion. One way to promote excretion is the use of cathartics such as magnesium citrate, as previously mentioned.

Since the majority of the paraquat absorbed is excreted renally, forced diuresis is recommended. Many authorities[12,14-16,49,100] recommended large volumes of normal saline with furosemide or mannitol to enhance renal excretion of paraquat, unless acute renal failure due to proximal tubular necrosis is already established. Dreisbach[49] feels that the urine output should be maintained at approximately 200 ml per hour. Conolly et al[50] and Davies et al[51] advise against forced diuresis because of the potential development of pulmonary edema or renal failure. Kerr et al[52,53] found that forced diuresis was only effective in the first twenty-four hours and even then only removed small quantities of paraquat.

Plasmaphoresis has been used in an attempt to remove paraquat, but results have been quite variable.[47,54,55] Exchange transfusions also have been tried, but the ultimate outcome was unchanged.[56]

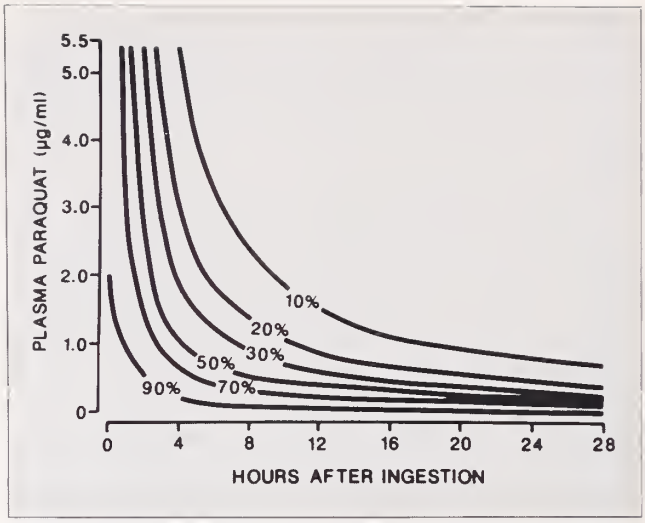

Figure 1. Graph demonstrating probability of survival by the relation of plasma paraquat concentration to time after ingestion. Percentage denotes the probability of survival. Used with permission. Hart TB, et al, *Lancet*, p 1222-1223, 1984.

Paraquat is water soluble, poorly protein bound, of low molecular weight, and minimally metabolized, making hemodialysis a logical choice. In vitro studies of hemodialysis[57] showed that up to 95% of the paraquat could be removed from the blood. However, in actual clinical practice, hemodialysis has not been that effective. Several studies[19,58-60] have demonstrated that if more than twenty-four hours have elapsed from time of ingestion, hemodialysis is only minimally effective, and if more than forty-eight hours have elapsed, hemodialysis is probably ineffective.

Studies with peritoneal dialysis[59,61-64] have revealed that it is probably no more effective than forced diuresis and carries the added risk of infection, although that risk is minimal.

Dasta[12] found that in patients with low plasma levels (1-2 ug/ml), hemoperfusion with activated charcoal provided paraquat clearances five to seven times higher than those obtained by hemodialysis. Maine and Winchester[67] demonstrated in an animal model that hemoperfusion with activated charcoal could reduce plasma levels of paraquat from 0.78 to 0.18 µg/dl in two and one-half hours. It is well documented that hemoperfusion with activated charcoal is superior to hemodialysis in clearing paraquat from the plasma.[12,13,19,41,42,57,65-67] Since

paraquat seems to accumulate quickly in the various organs, it is imperative that hemoperfusion with activated charcoal be started as soon as possible if significant clearing is to occur.

The third stage of treatment focuses on preventing toxic effects. Since the proposed mechanism of tissue injury by paraquat is the production of superoxide and possibly hydroxyl radicals, the pharmacologic treatment is directed toward that area.

Superoxide dismutase is an enzyme that exists in all oxygen-utilizing cells, which is known to remove O_2^-, ($O_2^- + 2H^+$ ----> H_2O_2).[23] It is felt that superoxide dismutase is the primary defense against potential damage to the cell by free-radical species. Several studies[18,68-70] have utilized parenteral administration of superoxide dismutase (Palosein, Diagnostic Data, Inc., or Ontosein, Worthington Biochemical Corp.) in an attempt to determine its safety, pharmacology, and efficacy in blunting superoxide production in paraquat poisoning. Harley et al[18] noted that the administered superoxide dismutase seemed to remain in the extracellular space, which may not effectively protect intracellular sites from the action of paraquat. Their[18] overall results with parenteral superoxide dismutase were disappointing.

Vitamin E (α-tocopherol) is a lipid-soluble vitamin. It has been shown that animals deficient in vitamin E have increased susceptibility to oxygen toxicity.[71-74] However, there is a decrease in oxygen toxicity if patients are pretreated with vitamin E.[72,75] Although the exact mechanism of vitamin E is not fully understood, it appears that it functions as a lipid antioxidant and as a free radical scavenger.[76-78] In experimental models, vitamin E appears to be of benefit in paraquat poisoning.[25,79] Redetzki[28] asserts that the possibility exists that vitamin E treatment, while not effective in decreasing the acute death rate, could reduce the development of pulmonary fibrosis in paraquat poisoning. Although not substantiated, early treatment may be needed for maximal efficacy.

Ascorbic acid also can act as a free radical scavenger.[80-82] One advantage of ascorbic acid over superoxide dismutase is that it enters the lungs from the blood and appears to accumulate in the fluid lining of the alveoli.[81] It has been demonstrated that ascorbic acid decreases toxicity to hyperbaric oxygen.[83,84] Schvartsman et al[85] showed that treatment with the combination of ascorbic acid and riboflavin produced a significantly higher survival rate in paraquat poisoned rats than did either agent alone.

N-acetyl-L-cysteine (Mucomyst) has been shown to be very effective in the treatment of acetaminophen poisoning by replacing the depletion of reduced glutathione. Redetzki et al[28] also have found evidence that there is depletion of the reduced form of glutathione in paraquat poisoning. This finding also has been substantiated in other studies.[25] It stands to reason that N-acetyl-L-cysteine has the potential to be effective in paraquat poisoning as well as in acetaminophen overdose.

Other agents that have been used to treat paraquat intoxication include (1) D-propanolol,[14,16,47,54] (2) selenium,[23,25] (3) clofibrate,[86,87] (4) butylhydroxyl toluene,[88] and (5) hypoxia.[29,89,90]

Corticosteroids[91,92] and estrogens[93] have been shown to be powerful antioxidants, but their usefulness in paraquat poisoning is questionable.[12,47,54,94,95] However, in most instances, steroids were used late in the treatment regimen. Whether early, large-dose steroid treatment is useful is still not known.

Immunosuppressive drugs such as azathioprine, bleomycin, cyclophosphamide, and fluorouracil have produced mixed success.[12,47,50,54,63,94-99] However, more data are needed before a definite conclusion as to their efficacy in paraquat poisoning can be made.

Chuensumran et al[101] found that colchicine significantly reduced pulmonary protein metabolism and collagen synthesis in paraquat-induced pneumonitis in mice. A similar finding was seen in one case reported by Vinchen et al.[102]

Webb et al[103] reported a case of a patient with paraquat intoxication with rapidly developing pulmonary fibrosis that was arrested with radiotherapy.

There have been a few cases where lung transplantations were performed on patients with paraquat intoxication.[104-106] In one case the transplanted lung developed recurrent postoperative pulmonary fibrosis secondary to paraquat poisoning.[106] Lung transplantation in many of these patients, ie, suicide attempts, brings up many ethical and moral issues that need to be addressed, but are not within the scope of the paper.

Conclusion

As is evident, there is quite a diverse approach to the treatment of paraquat poisoning. Some of the main problems in looking at treatment protocols for paraquat poisoning are the difficulties in running controlled studies and the relatively few patients.

In the emergency setting, one must focus on preventing absorption, ie, emesis and activated charcoal with magnesium citrate. If there is going to be any delay in starting hemoperfusion with

activated charcoal, forced diuresis should be started unless there is evidence of pulmonary edema or renal failure. Finally, preventing toxic effects is a very controversial area of treatment. Although the evidence is not conclusive, a combination of ascorbic acid, riboflavin, vitamin E, and Mucomyst, started early, may be of some benefit.

Once pulmonary fibrosis starts, the clinical prognosis is extremely poor and lung transplantation may be the patient's only hope of survival.

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Coming next month

Manuscripts scheduled for publication next month include a report on the dangers of hydrofluoric acid and a paper on platypnea and orthodeoxia, including a discussion of surgically corrected dyspnea with recurrence. Also scheduled is a commentary offering another view on the decline of deaths from respiratory distress syndrome/hyaline membrane disease.

Twin Pregnancy: An Appraisal of Management Options

Warren M. Crosby, MD

For term twins, delivery in a referral center is probably not important to survival, but the method of delivery might be, depending upon the development of fetal distress and the immediate availability of cesarean section.

Optimum management of twin gestation represents a compromise between the interests of each of the twins and those of the mother. What might be best for Twin A, such as a vaginal delivery, might not be best for Twin B, who might have a better chance if delivered by cesarean section. Whatever course of action is best for one or both twins might increase the hazards for their mother. In addition, the advisability of the use of internal podalic version and full breech extraction is being questioned, both from the standpoint of the inherent risk of trauma[1] and from the standpoint of training: few of today's residents have had wide experience with internal uterine manipulation. The recent and profound changes in obstetric management of premature fetuses and the remarkable improvement in the outlook for small newborns, particularly those in breech presentation delivered by cesarean section,[2] mandate a new look at clinical management options for twin gestation. Furthermore, it is clear that most hospitals cannot command the immediate availability of anesthesia and operating rooms that are required for safe management of twin labor.

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The purpose of this retrospective review is to analyze the relationship of clinical management options to perinatal mortality and morbidity in twin gestations.

Methods

Charts of all twin gestations from December 15, 1973, through December 30, 1983, were studied. Because the mortality for twins whose birth weight was less than 1,000 gm and length of gestation less than 28 weeks were very high (84%), all sets of twins in which one or both fetuses weighed less than 1,000 gm at birth were excluded. Because we could not analyze the adverse effects on the living twin of one twin dying in utero prior to labor, any set in which one or both twins were dead at the onset of labor was excluded from the study. Similarly excluded were sets in which one or both twins had an anomaly incompatible with life. One mother who delivered both twins at home was also excluded. There were 32 sets of twins excluded on the basis of these criteria. Three hundred fourteen consecutive sets of twins, 628 infants, that were phenotypically normal, alive at the onset of labor, and who weighed 1,000 gm or more at birth were studied. A detailed summary of each set was entered into a computer. When appropriate, Chi square analysis was used to establish statistical significance of rates of morbidity and mortality between the various groups.

Definitions Utilized In This Study

Mortality: The death of either twin after admission of the mother in labor or during the birth

Table I. Perinatal Mortality Among 628 Twins*
(Rate 14/1000 L.B.)

9 Deaths: Twin A = 4, Twin B = 5

Cause of death	
Prematurity	6
Fetal distress, abruptio	2
Locked twins	1
	9

*Twins weighed 1000 gm or more at birth, were phenotypically normal, and were alive at the onset of labor.

Table II. Morbidity Among Survivors

5 min Apgar ≤3	18
Severe RDS	5
ICH, hydrocephalus	5
NEC, RDS, moderate	3
Fracture humerus	1
Skull fracture	1
	33 (5.3%)

hospitalization. Follow-up beyond the initial discharge from the hospital was not possible for every twin. Therefore, mortality is limited to the birth hospitalization (Table I).

Infant morbidity: Every effort was made to include morbidity that could be reasonably related either to the twin situation or perinatal events. The chart of each infant admitted to the neonatal intensive care unit (NICU) was reviewed by a neonatologist who was not apprised of the method of delivery. Table II tabulates the total number of babies with morbid condition. Sixteen percent of twins were discordant in birth weight by more than 500 gm. Discordance was not included as a morbid condition. Also not included were conditions of uncomplicated prematurity such as jaundice, mild respiratory distress syndrome not requiring artificial ventilation, and hypoglycemia.

Maternal conditions: Fourteen percent of mothers developed pre-eclampsia, and that disease prompted the decision to bring about delivery in those patients. In no case was the maternal disease considered to have caused the infant death or morbidity other than that due to prematurity. Antepartum anemia was observed in 8% of mothers. The indication for cesarean section was not always stated. In many, uterine inertia was the unstated indication, which may reflect the author's reluctance to use oxytocin to stimulate labor in twin gestation. Oxytocin was not given to stimulate labor when uterine inertia was observed in the first stage of labor; cesarean section was done instead.

Results

Table I lists causes of infant mortality. The principal contributing factor to infant mortality was prematurity. The three intrapartum deaths are instructive: each delivered vaginally and may have been preventable by abdominal delivery. K.P. (#511), a 19-year-old primagravida was referred during the 35th week of gestation in active labor. At admission to the labor suite, she was found to be completely dilated. Twin A was right occipitoanterior (ROA) and spontaneously delivered with a local anesthetic. The vertex of Twin B was floating. Intermittent auscultation reported Twin B's heart rate at 120 per minute. After delivery of Twin A, oxytocin was begun to stimulate labor. The uterus did not respond, but since the fetus had a normal heart rate by auscultation, no further manipulations were instituted. Two hours after the delivery of Twin A, the fetal heart rate of Twin B disappeared. Two and a half hours following death, Twin B was delivered by version and extraction under general anesthesia. On the edge of the single placenta was a large fresh clot.

B.S. (#534) was a 16-year-old primagravida whose twins were not discovered until labor began in the 34th week. Twin A weighed 1600 gm at birth following an indicated midforceps delivery for fetal bradycardia. Twin A's Apgar scores were 6 at one minute and 7 at five minutes. Twin B was monitored by stethoscope during labor, but not during the delivery of Twin A. After an interval of six minutes following the delivery of Twin A, Twin B delivered spontaneously. Twin B was a nonmacerated stillbirth. It is evident in retrospect that Twin B was in distress rather than Twin A.

M.P. (#520) was a 17-year-old primagravida who had known of her twin gestation since the 29th week, and had been instructed to stay in bed at home as much as possible. In labor at 38 weeks, Twin A was presenting by the breech. An x-ray showed Twin B presenting by the vertex. During delivery of Twin A, it became clear that the twins were locked. Twin B ultimately delivered prior to Twin A. Twin B had an Apgar score of 1 at one minute. It was successfully resuscitated and survived, though morbid. Twin A was stillborn. Twin A weighed 1780 gm and B 1160 gm.

A cesarean section would have to have been performed as a routine for all breech-vertex twins to have prevented the death and morbidity from the locked twins. To have prevented the intrapartum deaths of two B twins from fetal distress, the distress would have to have been detected promptly and

Table III-1. Mortality and Morbidity of Twins Delivered at 28-31 Weeks Gestation

Twin A

Mortality Morbidity	Method of Delivery Abr	C/S	Vag	Total	Significance
Yes	0	2	6	8	
No	1	8	4	13	
Total	1	10	10	21	
% Mortality Morbidity				38	N.S.

Twin B

Mortality, Morbidity	Method of Delivery Abr	C/S	Vag	BE-VE	Total	Significance
Yes	0	1	4	4	9	
No	2	2	7	1	12	
Total	2	3	11	5	21	
% Mortality Morbidity				43		N.S.

Abr = Assisted breech, **C/S** = Cesarean section, **Vag** = Spontaneous vaginal delivery, cephalic presentation, **BE-VE** = Breech extraction, internal podalic version and extraction

Table III-2. Mortality and Morbidity of Twins Delivered at 32-36 Weeks Gestation

Twin A

Mortality, Morbidity	Method of Delivery Abr	C/S	Vag	Total	Significance
Yes	1	2	3	6	
No	3	43	76	122	
Total	4	45	79	128	
% Mortality Morbidity	25	4	4	5	N.S.

Twin B

Mortality, Morbidity	Method of Delivery Abr	C/S	Vag	BE-VE	Total	Significance
Yes	1	5	4	2	12	
No	9	46	43	18	116	
Total	10	51	47	20	128	
% Mortality Morbidity	10	10	8.5	10	9	N.S.

Abr = Assisted breech, **C/S** = Cesarean section, **Vag** = Spontaneous vaginal delivery, cephalic presentation, **BE-VE** = Breech extraction, internal podalic version and extraction

Table III-3. Mortality and Morbidity of Twins Delivered at 37-42 Weeks Gestation

Twin A

Mortality, Morbidity	Method of Delivery Abr	C/S	Vag	Total	Significance
Yes	0	1	0	1	
No	18	40	106	164	
Total	18	41	106	165	
% Mortality Morbidity		2.5		0.6	N.S.

Twin B

Mortality, Morbidity	Method of Delivery Abr	C/S	Vag	BE-VE	Total	Significance
Yes	1	2	1	2	6	
No	26	45	65	23	159	
Total	27	47	66	25	165	
% Mortality Morbidity	4	4	1.5	8	4	N.S.

Abr = Assisted breech, **C/S** = Cesarean section, **Vag** = Spontaneous vaginal delivery, cephalic presentation, **BE-VE** = Breech extraction, internal podalic version and extraction

Table IV. Twin Mortality and Morbidity by Method of Delivery

Twin A

Mortality, Morbidity	Method of Delivery Abr	C/S	Vag	Total	Significance
Yes	1	5	9	15	
No	22	91	186	299	
Total	24	96	195	314	
% Mortality Morbidity	4	5	5	5	N.S.

Twin B

Mortality, Morbidity	Method of Delivery Abr	C/S	Vag	BE-VE	Total	Significance
Yes	2	11	9	5	27	
No	37	98	109	43	287	
Total	39	109	118	48	314	
% Mortality Morbidity	5	10	8	10	8.6	N.S.

Abr = Assisted breech, **C/S** = Cesarean section, **Vag** = Spontaneous vaginal delivery, cephalic presentation, **BE-VE** = Breech extraction, internal podalic version and extraction

treated immediately by cesarean section or internal podalic version and breech extraction.

Since the number of deaths is small and because the thrust of this communication is to evaluate those methods of delivery most likely to be harmful, mortality and morbidity and five-minute Apgar scores of 3 or less have been combined in the tables to give the most appropriate picture of adverse effects of the various presentations and methods of delivery.

Because of discrepancy in the size of twin fetuses at any given week of gestation, and because the length of gestation is available clinically (as opposed to birth weight) the remaining tables are based on length of gestation rather than birth weight.

Table III-1 shows the morbidity and mortality and method of delivery of the smallest group of twins, those delivered from 28 to 31 weeks of gestation. The size of the individual groups is small, and no clear indication of the safest method of delivery can be identified.

Table III-2 shows the next largest group and again, no clearly superior method of delivery is discernible.

Table III-3 shows the largest group. There is no distinctly superior method of delivery for these term babies.

Table IV relates the morbidity and mortality of all twins to the method of delivery, regardless of length of gestation. These are no statistically significant differences in the perinatal morbidity and mortality of the twins among the various types of delivery.

Table V relates the morbidity and mortality of the twins by their presentation and method of delivery. It should be noted that the "vaginal" method of delivery noted in the tables includes all non-cesarean deliveries such as assisted breech, forceps, and full-breech extraction or internal podalic version and extraction. There are no statistically significant differences in the rate of mortality and morbidity amongst the various methods of delivery in any of the presentations. This lack of statistical significance was apparent when the groups were divided into term and preterm deliveries as well. "Other" presentations in Table V includes variations of compound presentations and transverse lies that did not fall into the four standard categories of twin presentations.

Table VI compares morbidity and mortality of all of the twins. Chi square analysis indicates no statistically significant differences in morbidity and mortality amongst the four general methods of

Table V. Twin Mortality and Morbidity Related to Presentation and Method of Delivery

1. Breech-Breech

Mortality, Morbidity	Method of Delivery C/S	Vag	Total	Significance
Yes	5	0	5	
No	43	28	71	
Total	48	28	76	
% Mortality Morbidity	10	—	7	N.S.

2. Breech-Vertex

Mortality, Morbidity	Method of Delivery C/S	Vag	Total	Significance
Yes	3	2	5	
No	35	18	53	
Total	38	20	58	
% Mortality Morbidity	8	10	9	N.S.

3. Vertex-Breech

Mortality, Morbidity	Method of Delivery C/S	Vag	Total	Significance
Yes	3	5	8	
No	35	99	134	
Total	38	104	142	
% Mortality Morbidity	8	5	6	N.S.

4. Vertex-Vertex

Mortality, Morbidity	Method of Delivery C/S	Vag	Total	Significance
Yes	0	16	16	
No	32	222	254	
Total	32	238	270	
% Mortality Morbidity	—	7	6	N.S.

5. Other

Mortality, Morbidity	Method of Delivery C/S	Vag	Total	Significance
Yes	5	3	8	
No	44	30	74	
Total	49	33	82	
% Mortality Morbidity	10	9	10	N.S.

C/S = Cesarean section, Vag = Spontaneous vaginal delivery, cephalic presentation

Table VI. Mortality and Morbidity of All Twins by Method of Delivery

Morbidity, Morbidity	(Both) Vag	(Both) C/S	(Both) BE-VE	(B Only) C/S	Total	Significance
Yes	18	14	7	3	42	
No	296	178	89	23	586	
Total	314	192	96	26	628	
% Mortality Morbidity	6	7	7	12	6.7	N.S.

C/S = Cesarean section, Vag = Spontaneous vaginal delivery, cephalic presentation, BE-VE = Breech extraction, internal podalic version and extraction

Table VII. Twin Mortality and Morbidity for Twin B by Method of Delivery

Mortality, Morbidity	(Both) Vag	(Both) C/S	(Both) BE-VE	(B Only) C/S	Total	Significance
Yes	11	9	5	2	27	
No	146	87	43	11	287	
Total	157	96	48	13	314	
% Mortality Morbidity	7	9	10	15	8.6	N.S.

C/S = Cesarean section, Vag = Spontaneous vaginal delivery, cephalic presentation, BE-VE = Breech extraction, internal podalic version and extraction

Table VIII. Mortality and Morbidity of Twins by Presentation and Cesarean Rate

Type	# Sets	C/S Rate (%)	% Mortality, Morbidity
V-V	135	12	6
V-B	71	27	6
Other	41	58	10
B-B	38	63	7
B-V	29	66	9
	314		

(Differences not significant)

delivery. In this table, the four methods of delivery are cesarean section for both twins (Both C/S), vaginal delivery for both twins including forceps and assisted breech (Vag), full-breech extraction and/or internal podalic version and extraction (BE-VE), and the thirteen sets of twins in which Twin A was delivered vaginally and Twin B by cesarean section (B only C/S). (The latter group contains 13 A twins, one of which was morbid.

Table VII further defines delivery options for Twin B. It depicts the morbidity and mortality for Twin B by the method of delivery. None of the two-way comparisons shows a significant difference between the method of delivery and the incidence of morbidity and mortality. This lack of statistical significance also is true when the groups were separated into term and pre-term sets.

Table VIII shows the mortality and morbidity for all twins by presentation and cesarean section rate. Vertex-vertex twins were the most common. They were believed to have the best prognosis and thus had the lowest cesarean section rate. The highest cesarean section rate was associated with breech-vertex presentation. There is no indication from these figures that a higher cesarean rate is associated with improved perinatal outcome. However, we tended to perform cesarean section more frequently when the first twin was not vertex.

Figure 1 depicts the effect of early detection of twin gestation and the institution of instructions for bed rest on the incidence of premature birth. This figure demonstrates that the number of premature births for women whose twins were diagnosed late or who were not given instructions for bed rest is higher than for women whose twins were discovered early and who were instructed to get as much bed rest as possible.

Figure 2-1 is a three-dimensional chart that relates mortality and morbidity to both the type of twin presentation and method of delivery for the entire series. Similarly, Figures 2-2, 2-3, and 2-4 relate outcome to presentation and method of delivery in the 28- to 31-week gestational age group (Figure 2-2), the 32- to 36-week group (Figure 2-3), and the term group (Figure 2-4). With these charts the clinician can observe the relationship of the presentation of twins at a given gestational age to outcome by method of delivery. While there are no statistically significant differences in any of the outcome rates for any combination of presentation and method of delivery in this series, we did perform cesarean delivery much more frequently when Twin A was in a nonvertex presentation and also in pre-term gestations. That the perinatal mortality rate in this series of normal twin fetuses that were alive after onset of labor was low (1.4%) speaks well for the indicated choices of delivery method.

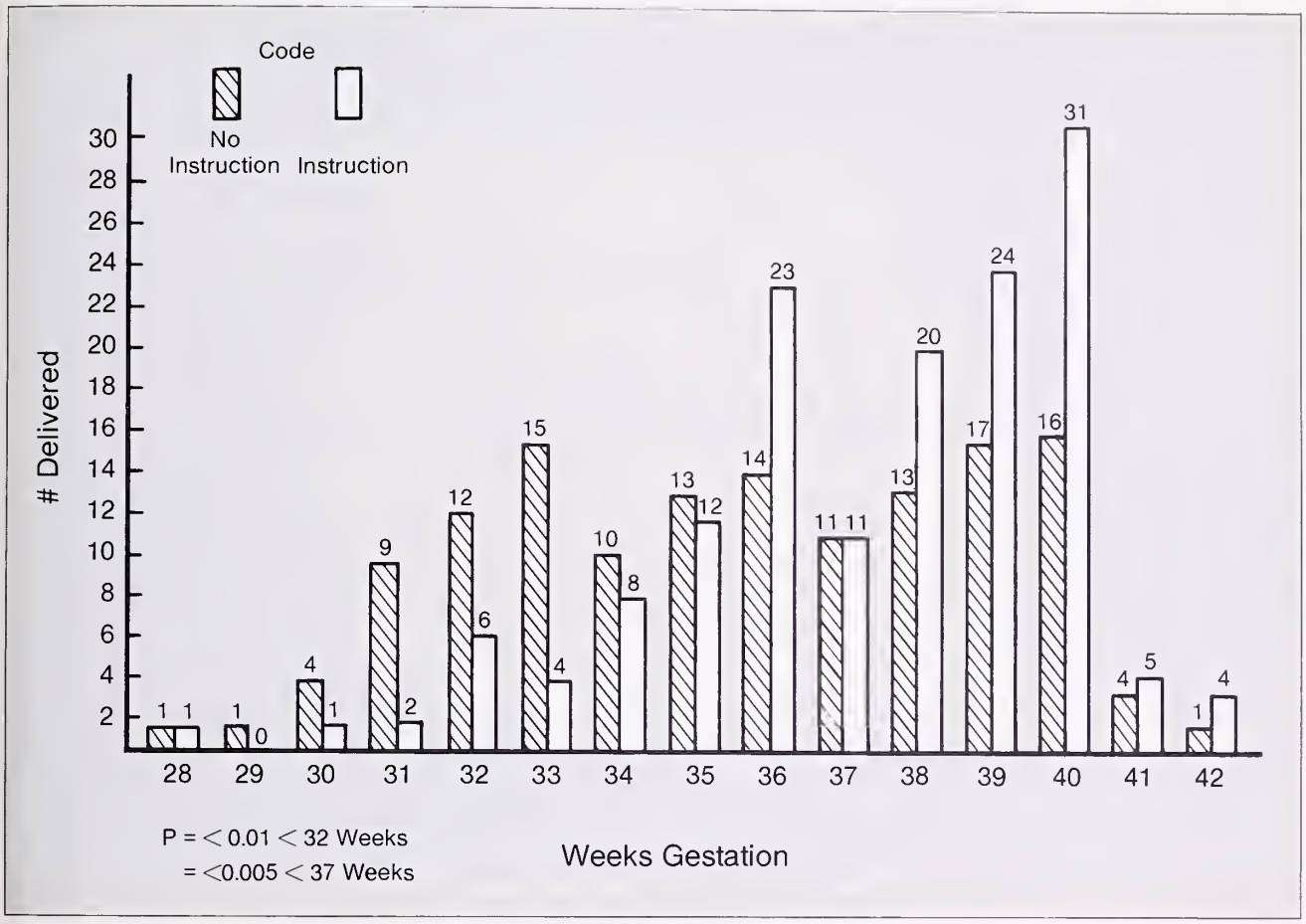

Figure 1. Effect of bed rest instruction of the mother on the incidence of premature birth.

Discussion

The most prominent problem in twin gestation is the morbidity and mortality associated with prematurity. The length of gestation is a far more important determinant of perinatal mortality and morbidity that is the presentation or method of delivery. Therefore, efforts to prolong the length of gestation and increase the birth weight of the twins are of primary concern. There have been several reports indicating that bed rest from the latter part of the second trimester, until fetal lung maturity was reached, improved birth weight, length of gestation, and perinatal morbidity and mortality.[3,4] Other authors, however, have questioned the benefit of bed rest for twin gestation.[5,6] In this study, a clear mandate for more sedentary activities is seen.

The usual routine at the University of Oklahoma hospitals and clinics, where the majority of these patients were cared for throughout pregnancy, is to utilize ultrasound at any time when there is a size/date discrepancy. Twins, therefore, are often found prior to the twenty-eighth week of gestation. Once twins have been identified, the patient is told that it will be better for her to quit work if she is working and to spend as much time in bed as she can during the remainder of the pregnancy. No effort is made to investigate compliance with these recommendations.

The charts in this series contained enough information to establish whether the antepartum diagnosis of twins had been made in 296 mothers. When morbidity and mortality were combined, there was a more favorable outcome in those patients in whom the antepartum diagnosis was made than for those women in whom it had not ($p = 0.02$). Similarly, those women known to be carrying twins also were instructed to go to bed and get as much rest as possible. The perinatal outcomes of this group also were better than in the group that did not receive this instruction ($p = 0.004$). This improvement was brought about principally by an increase in birth weight in the group that had the antepartum diagnosis made and the recommendations given.

Prophylactic administration of beta mimetic

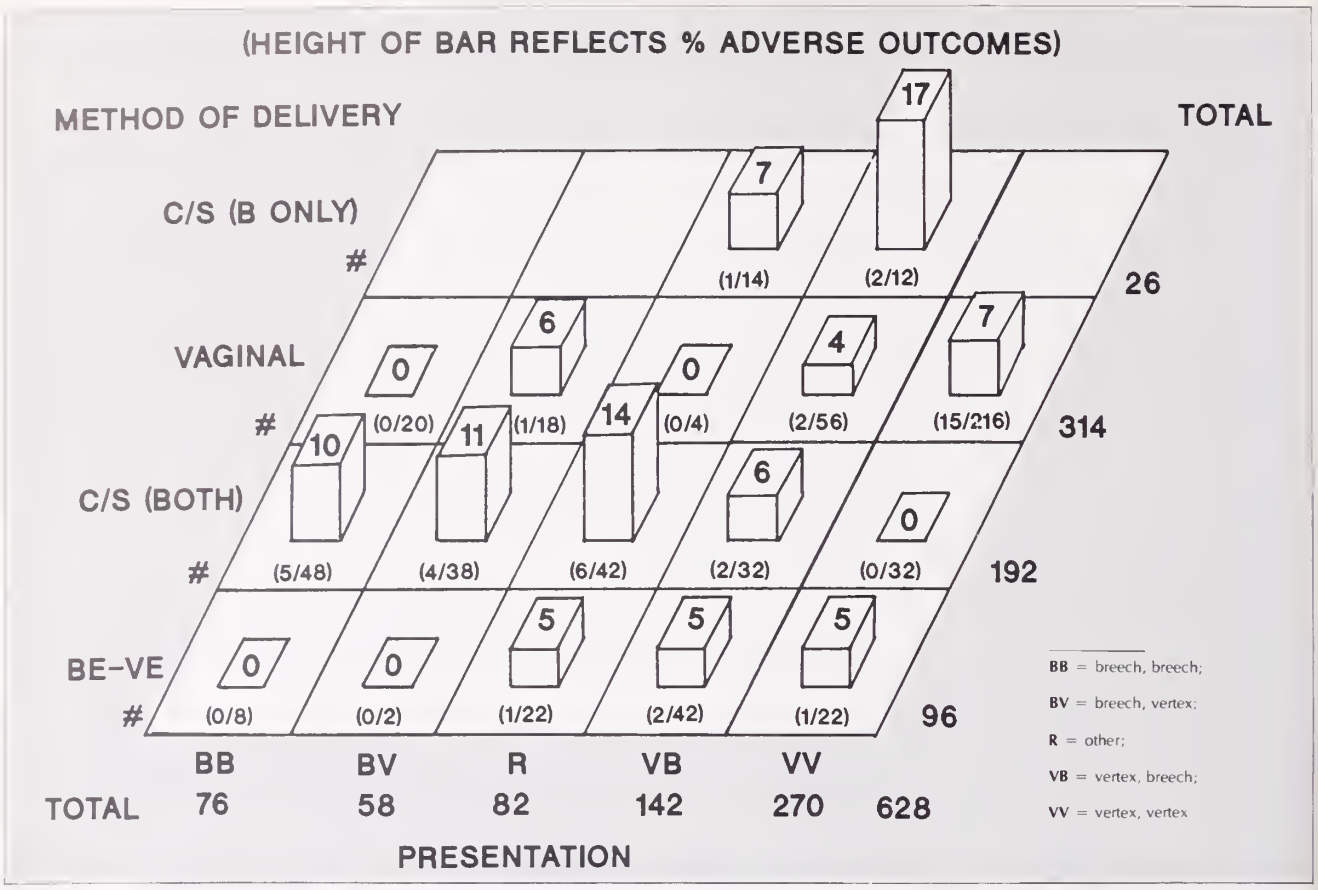

Figure 2-1. Outcome of twins related to presentation and method of delivery: Total Series

tocolytic drugs has not been shown to be successful in reducing perinatal mortality of twin gestation.[7] We did not use prophylactic tocolytic agents in the management of twin gestations in this study.

X-Ray and Ultrasound. An x-ray should be obtained at 24 to 28 weeks if twins have been diagnosed by ultrasound, because it may be difficult to be certain of the number of fetuses observed by ultrasound. Similary, if vaginal delivery is contemplated, an x-ray should be obtained in early labor to ascertain the presentation of both twins so that a plan for delivery can be developed. I also believe that x-ray pelvimetry enables the physician to ensure pelvic adequacy prior to anticipated breech delivery.

The use of real time ultrasound to follow the progress of the second twin during the second stage of labor, and to monitor the fetus during extra- or intrauterine manipulation has been suggested by Chervenak, et al.[8] We have used this technique and find it useful for identifying fetal bradycardia, nuchal arms, and head extension.

Management During Labor. What is the optimum management once labor begins? Traditionally, management decisions are dependent upon the type of presentation with malpresentation (compound presentation or transverse lie of either twin) usually indicating a cesarean delivery. Those twins presenting by the more usual longitudinal presentations are allowed to labor with the anticipation of vaginal delivery, either spontaneously or with intrauterine manipulation. Many authors suggest the use of oxytocin stimulation when hypotonic uterine inertia delays the progress of labor, although the safety of this procedure has not been established.[9] In this series, the patients were managed by a variety of supervisors, but the vast majority adhered to the management principles used by the author: oxytocin is not utilized to stimulate the first stage of labor in a uterus already overdistended by multiple gestation. Therefore, when labor was delayed in hypotonic uterine inertia that did not improve in a few hours, cesarean section was the usual method of delivery.

Prior to the publication of Brenner and Hendrick's article,[2] the majority of preterm breech presentations were delivered vaginally, including those that were part of a twin gestation. The rapid assimilation of the suggestion that the premature breech be delivered by cesarean section was soon extended to the twin situation, without any evidence to indicate that the premature breech in a twin gestation

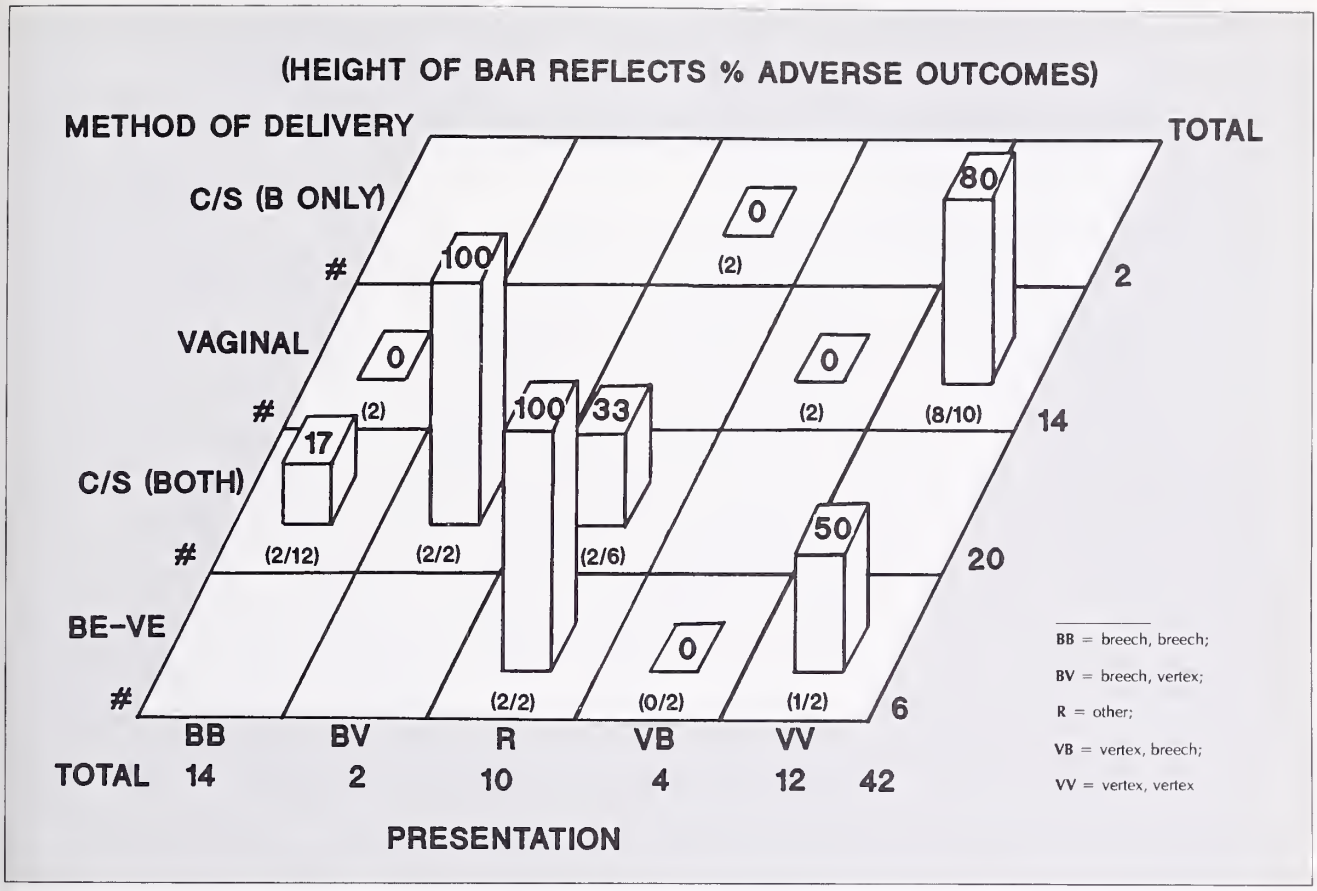

Figure 2-2. Outcome of twins related to presentation and method of delivery: 28-31 weeks gestation

had the same risk of perinatal morbidity and mortality as that of a singleton vaginal birth. Many practitioners added premature labor with either twin in breech presentation to their list of indications for cesarean section.

In the first of 13 patients in this series in which a cesarean section for Twin B was accomplished after vaginal delivery of Twin A, the mother was in premature labor with a pelvis known by x-ray to be contracted. The second twin presented by the vertex but had not entered the pelvis 30 minutes following delivery of Twin A. The resident and the staff physicians preferred cesarean section to an internal podalic version and full breech extraction through a contracted pelvis. The baby had no particular problems nor did the mother.

It can be seen from Table VII that the incidence of mortality and morbidity in this small group of 13 patients was 15.4%; it was somewhat higher than that for cesarean section of both twins. However, the difference in mortality and morbidity between abdominally and vaginally delivered second twins is not statistically significant, similar to the experience reported by Evrard and Gold.[10] Furthermore, these infants would have been delivered vaginally had not the attempt at vaginal delivery failed or fetal distress supervened.

One of the two morbidities seen in this group occurred during the wait for the delivery of the second twin after the vaginal delivery of the first. This newborn was delivered within five minutes of the sudden onset of fetal distress in the second twin after delivery of Twin A. The second stage was being managed in an operating room with the instruments open, the nurses and the physicians scrubbed, and an anesthesiologist in attendance. Since the cord blood pH of this infant was 7.35, it is probable that the observed subsequent neurological problems in the second twin were not related to the apparent fetal distress or the method of delivery.

Preventability of Morbidity and Mortality. Table I lists cause of death in the 9 perinatal deaths. Three of the 9 (0.4% of entire series) were potentially salvable had a cesarean section been performed at the onset of labor. It is equally clear that cesarean section could not have altered the outcome for the remaining 6 premature fetuses, all of whom died from respiratory complications of prematurity. While there is no statistically significant increase in mortality associated with twins presenting breech-vertex

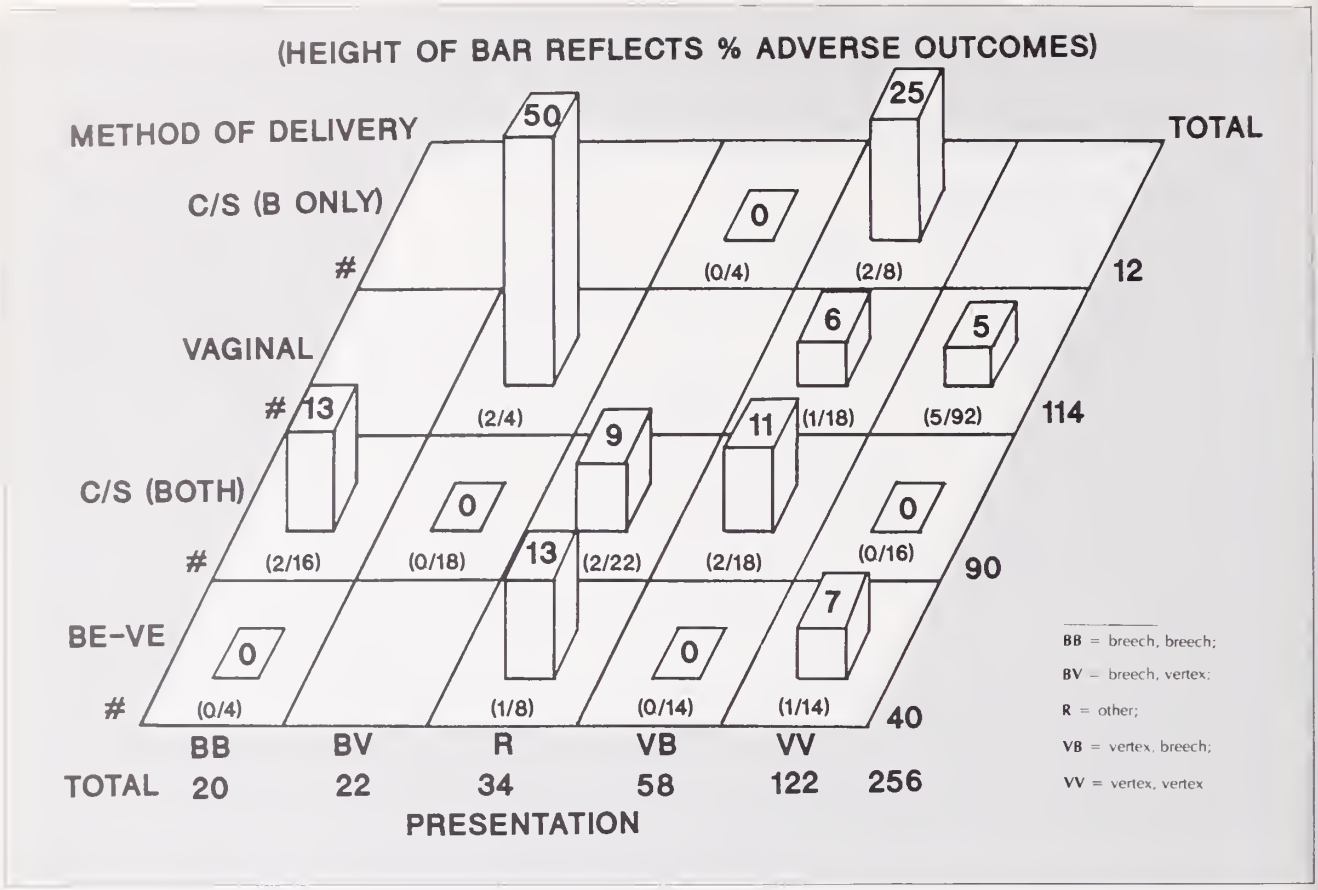

Figure 2-3. Outcome of twins related to presentation and method of delivery: 32-36 weeks gestation

(Table V), this is a small group. Because it is impossible to predict which set of twins will lock until it is too late, all patients with viable twins in which the first twin presents by the breech and the second twin presents by the vertex should have a low vertical cesarean section rather than vaginal delivery.

Breech. Breech presentations were usually managed by cesarean section at the onset of labor. The mortality and morbidity rate for those delivered abdominally is not significantly lower than for those delivered vaginally, although the latter group is very small.

Twin gestations in which one or both fetuses are in a transverse lie or compound presentation ("Other") were usually managed by cesarean section. Those that were delivered vaginally generally were those in which Twin A was vertex and Twin B transverse. When Twin A delivered spontaneously, internal podalic version and full breech extraction was performed for Twin B. If the latter technique failed or produced fetal distress, an immediate cesarean section was done.

Vertex-vertex and vertex-breech presentations were generally managed by expecting spontaneous vaginal delivery; cesarean section was performed only for arrest of labor or fetal distress. The rates of mortality and morbidity for this group do not fault this management plan. Cesarean section would have to have been performed at the onset of labor for each of these 412 cases to have favorably influenced the 5% mortality/morbidity rate (21 cases) associated with vaginal delivery. Since the mortality/morbidity rate for those delivered abdominally was 4%, it is clear there is no advantage to cesarean section for these longitudinal presentations in the absence of other considerations.

Power Analysis. The most crucial point to be determined by this study is to be certain that the rate of perinatal morbidity/mortality associated with internal uterine manipulation for Twin B was or was not significantly higher than other methods of delivery. With the number of twins studied, the least difference in mortality/morbidity rate that would have been statistically significant was ten percentage points between those delivered by version or full breech extraction and all other second twins. If the observed difference of 8.3% vs 10.2% is the true difference, it would take a series of 5,890 Twin B infants in each arm to be 95% certain of detecting a difference at the $p = <0.05$ level.[11] I feel confident,

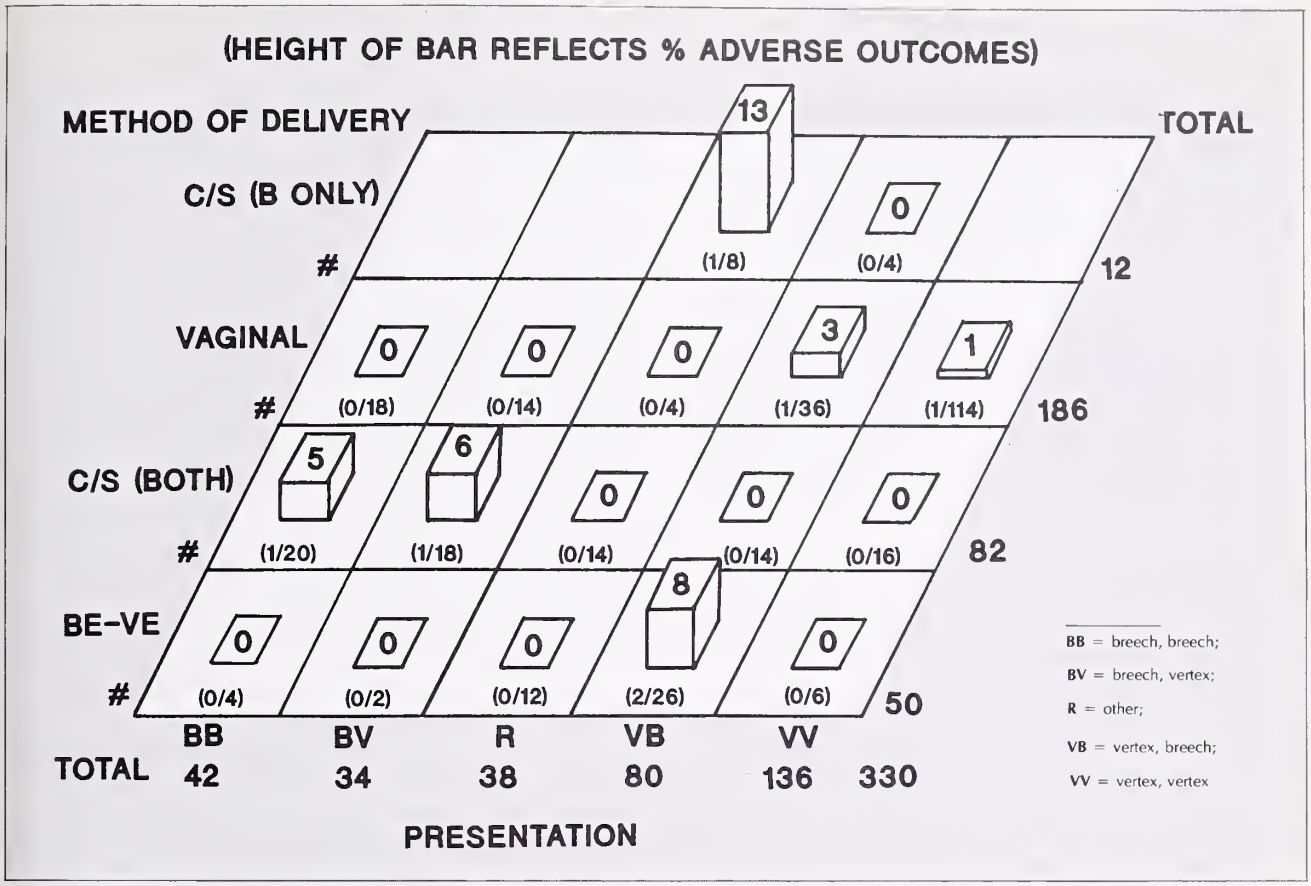

Figure 2-4. Outcome of twins related to presentation and method of delivery: Term

therefore, that the conclusions reached by statistical analysis in this study are appropriate. Suggestions for management closely parallel those of Olofsson.[12]

Recommendations for Management of Twins.

1. Early diagnosis. In every prenatal patient, size/date discrepancy should be investigated whenever it appears, ordinarily by ultrasound examination. If twins are found, an x-ray should be performed at 24 to 28 weeks (or later if diagnosis is made in third trimester) to confirm the number of fetuses. The diagnosis of twins is clearly important enough to warrant the expense.

2. Antepartum management. Once the diagnosis of twins is established, the patient should be instructed to increase her intake of iron and folic acid, as the incidence of nutritional anemia is considerably higher in twins than in normal pregnancy. The patient should be instructed to quit her job and to spend as much time in bed as possible until fetal lung maturity is assured.

3. Labor management. When labor ensues, the proper management of labor and delivery will depend not only upon the length of gestation, the presentations of the twins, and the quality of labor, but also upon the capabilities of the hospital in which the labor and delivery are to be conducted. All twin gestations beyond twenty-five weeks should be considered salvageable if they can be delivered in a tertiary care center. Threatened premature labor should be vigorously treated with tocolysis and steroid lung maturation enhancement whenever appropriate.

Managing Labor in a Tertiary Care Center. At admission in labor, x-ray pelvimetry should be obtained to determine the presentations and positions of both twins, adequacy of pelvic size and presence of fetal abnormalities, such as conjoined twins. Subsequent management will depend on the presentation, position, length of gestation, and quality of labor.

Where the possibility of locking occurs. In breech-vertex presentations, low vertical cesarean section should be accomplished. While the incidence of locked twins approximates 10% of breech-vertex twins, once it occurs, the likelihood for damage of both fetuses is large. With that in mind, the risk of routine cesarean section for all such twins more than compensates for the risk of the extremely high rate of morbidity and mortality from locking.

In the absence of the usual longitudinal lie for both twins, a vertical cesarean section should be seriously considered. If the physician who is to conduct the labor and delivery is skilled in intrauterine manipulations, there is no evidence in this study that cesarean section has a clear advantage over intrauterine manipulation as far as perinatal mortality and morbidity for the second twin is concerned. In the absence of such clear evidence, the advantage of intrauterine manipulation over cesarean section for the mother is apparent. On the other hand, we did cesareans on the majority of these twins and enjoyed a low perinatal morbidity and mortality rate.

Very few of today's finishing residents have had substantial experience in intrauterine manipulation, and the medical-legal climate is such that they and those who follow them are unlikely to ever become skilled in these techniques. Therefore, where the likelihood of intrauterine manipulation is high, a vertical cesarean section at the onset of labor when one or both twins presents in a nonlongitudinal lie would seem to be appropriate.

Longitudinal lies. The perinatal morbidity and mortality for vertex-vertex, vertex-breech, and breech-breech presentations in this series were similar. There is no evidence that routine cesarean section would offer significant improvement in perinatal mortality and morbidity for these presentations regardless of the length of gestation. Therefore, if one is conducting labor and delivery in a tertiary or referral center, one should anticipate vaginal delivery of both twins in the absence of abnormal labor. In the presence of abnormal labor, I believe that oxytocin carries with it a higher perinatal morbidity and mortality for the fetus than does cesarean section. Therefore, my own prejudice is to perform a cesarean section rather than to use oxytocin. There are no data in this study to support or refute this view except that this philosophy was followed in this series and the subsequent perinatal mortality and morbidity rates are low.

The anticipated vaginal delivery should be conducted in a cesarean section or operating room with nurses scrubbed and the abdomen prepared for an immediate cesarean section should one become necessary. Pelvic size should be known so that a breech delivery through a contracted pelvis can be avoided. Fetal monitoring externally of Twin B and internally of Twin A should be accomplished during the course of the entire labor, including the second stage. With the indication of fetal distress for either twin, immediate delivery should be brought about. This requires the presence of an anesthesiologist or a nurse-anesthetist throughout the labor.

Managing Labor in a Community Hospital. During labor the majority of twins will be premature in gestational age as well as weight. The perinatal morbidity and mortality is elevated when such twins deliver in a community hospital. Therefore, premature twins are best handled in a referral center and should be transported while in utero whenever possible. Term infants, on the other hand, can be expected to do well in a community hospital nursery in the absence of other complications.

The recommendations outlined for conducting labor in referral centers with regard to the management of breech-vertex presentations and other malpresentations hold for term twins delivered in community hospitals. A low vertical cesarean section at the onset of labor is recommended for these situations. However, there is no longitudinal lie in which the delivery of the second twin might be better managed by internal uterine manipulation and rapid vaginal delivery or an immediate cesarean section because of the sudden development of fetal distress. If the hospital cannot command the presence of an obstetrician with experience in internal uterine manipulations and the immediate availability of an anesthetist or anesthesiologist for the entire labor and delivery, as well as a room in the labor area set aside for emergency cesarean delivery, it is prudent for patients in such a hospital to be delivered by a planned low vertical cesarean section at the onset of labor or as soon as fetal lung maturity can be established.

Discussion with Parents. It is important to discuss with the parents the risks of twin delivery, whether accomplished vaginally or abdominally, and the particular clinical situation in which the doctor and the patient find themselves. This article provides data regarding the incidence of perinatal morbidity and mortality under combinations of gestational length, method of delivery, and presentation of the fetuses that were delivered in a tertiary care center. With these data, it should be possible to carefully delineate the risks for any individual set of normal twins in any clinical situation.

Acknowledgment
The author acknowledges the assistance of Roger E. Sheldon, MD, the neonatologist who classified the morbid states encountered in this series of infants, and J. Christopher Carey, MD, who performed the power analysis.

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The Author

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FIFTY YEARS AGO

Pregnant Women May Eat Cucumbers

There is no basis for the idea that cucumbers and melons should be avoided during pregnancy, according to the Journal of the American Medical Association.

Malpractice Insurance

With the season for renewal of malpractice insurance by the doctors of Oklahoma almost at hand, a great number of inquiries relative to the Oklahoma Group Malpractice policy are being received by the executive secretary's office.

This policy, which is written only for doctors who are members of the Oklahoma State Medical Association, is now carried by approximately 250 members of the state society. Insurance coverage in this policy, which is written by the Houston Fire and Casualty Company, is for minimum limits of $25,000 for any one claim and maximum limits of $40,000 for any one policy year.

Application forms have just been mailed to every member of the state organization and anyone desiring information is invited to write the state society office, 210 Plaza Court, Oklahoma City.

—J Okla State Med Assoc
October 1939

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August 27

Award presentations highlight OSMA Board of Trustees meeting

Award presentations headed the list of activities at the August 27 meeting of the Oklahoma State Medical Association (OSMA) Board of Trustees in Oklahoma City.

Awards. The 1989 A.H. Robins Award for community service was presented to Charles R. Green, MD, Lawton. Presenting the plaque to Dr Green was Robins representative Damon L. Williams.

OSMA Past President M. Joe Crosthwait, MD, Oklahoma City, presented the Donald J. Blair Friend of Medicine Award to OSMA Executive Director David Bickham.

President's Report. President John R. Alexander, MD, Tulsa, announced that an OSMA-OUHSC Liaison Committee has been formed to deal with the "town-gown" hostility that has developed over the proposal of a preferred provider organization (PPO) for state employees.

A lawsuit has been brought against the PPO by 18 state hospitals, Dr Alexander said. OSMA had an opportunity to join in the lawsuit, but declined in order to ensure the continuation of the liaison committee.

Dr Alexander reported that state DOs are again pressing for coverage by the Physicians Liability Insurance Company (PLICO), as their insurance situation continues to deteriorate.

Secretary-Treasurer's Report. James D. Funnell, MD, Oklahoma City, secretary-treasurer, reported that two recommendations had been formulated by the OSMA Executive Committee: (1) grant a single-day extra per diem for traveling to the American Medical Association (AMA) interim meeting in Honolulu in December, and (2) allow an extra OSMA staff member to attend. Both recommendations were approved by the board.

Regarding the separation of OSMA and PLICO accounts, Dr Funnell presented two options formulated by OSMA and PLICO staffs: (1) separate PLICO into an irrevocable trust, thereby allowing a separate audit, and (2) separate the accounts now. Bids for the auditing were solicited, and the board approved the bid of BDO Seidman.

PLICO Report. The report of PLICO President C. Alton Brown, MD, Oklahoma City, noted the following:

• Large claims continue, and will probably necessitate the continuation of the policy fee required last year by the actuaries and insurance department.

• PLICO's number of open claims remains essentially the same as last year.

• PLICO's incurred but not reported loss and

(continued)

Joe Crosthwait, MD, reads the inscription on the Donald J. Blair Friend of Medicine Award before presenting it to OSMA Executive Director David Bickham. Charles R. Green, MD, Lawton, (far right) smiles in appreciation after receiving the A.H. Robins Award.

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Board of Trustees *(continued)*

expense reserve has substantially increased, from $22 million last year to $28 million this year.

• Professional liability losses are up approximately 20%, reflecting an increase in the size of the average loss.

• Since the beginning of the program, PLICO Accident and Health has paid out $65 million in claims, with roughly $12.5 million paid out last year.

Oklahoma Foundation for Peer Review (OFPR) Report. OFPR Executive Director Jim Williams reported the following:

• OFPR has identified 1% to 1.5% of hospital admissions per month as inappropriate.

• The OFPR Board of Directors will implement a new level of review which will require a third physician review before an adverse decision on quality of care is reported.

• HCFA's new requirements for payment, issued through Aetna Medicare, include not only precertification authorization but also the provider number of the referring physician.

Physician Recovery Committee. Medical Director J. Darrell Smith, MD, Oklahoma City, reported that 105 physicians have undergone treatment, recovered, and returned to practicing medicine.

Resolutions to the AMA. William O. Coleman, MD, Oklahoma City, presented two resolutions for consideration by the board. The first deals with state and county credentialing data banks as the preferred source for credentialing information. The second deals with the National Childhood Vaccine Injury Act of 1986. Both were approved by the board and will be forwarded to the AMA House of Delegates for consideration at its December meeting.

Executive Director's Report. At the request of Mr Bickham, the board authorized Dr Alexander to confirm Oklahoma City attorney Robert Looney as the new trustee for the CIGNA trust fund.

The board also approved an expenditure of up to $30,000 for a new telephone system in the OSMA offices.

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Three from Tulsa

OSMA trustees meet in OKC, approve eight new Life Members

At its August 27 meeting in Oklahoma City, the Oklahoma State Medical Association's Board of Trustees approved eight applications for Life Membership.

The new Life Members from Tulsa are Duane E. Brothers, MD; Ben F. Gorell, MD; and C. Frank Knox, MD.

Others approved were Frank L. Adelman, MD, Enid; Melvin R. Arthurs, MD, Pawnee; Charles E. Green, MD, Lawton; Charles K. Holland, MD, McAlester; and Ray E. Spence, MD, Pauls Valley.

Any OSMA member in good standing is eligible for Life Membership by meeting one or more of the following qualifications: (a) retired from the active practice of medicine due to ill health or age, (b) engaged in the active practice of medicine for fifty years or more, or (c) attained the age of seventy years.

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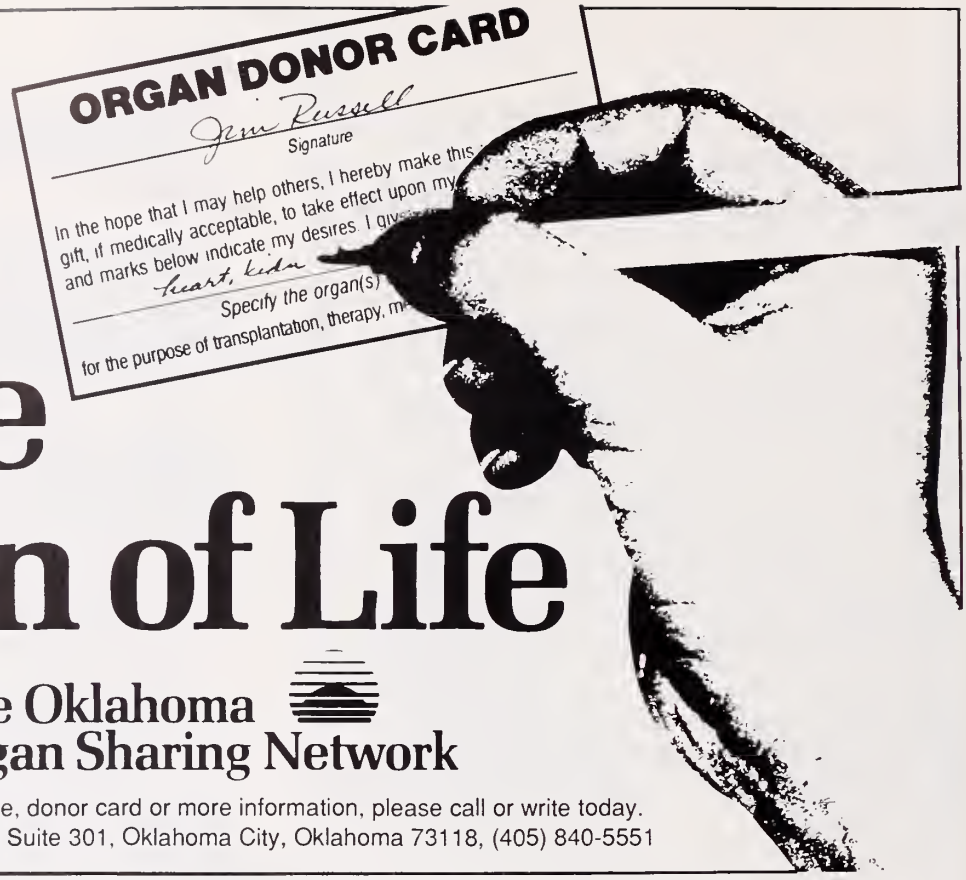

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Defining the Epidemiology of Injuries: The First Step in Prevention

More than half of all children and youth who die, die as a result of injuries. As the leading cause of potential life lost, injuries are receiving local and national attention. A statewide population-based surveillance system for hospitalized and fatal burns, spinal cord injuries, and drownings/near drownings has been selected based on frequency, severity, and disability. The three injury types were made reportable to the Oklahoma State Department of Health in 1987.

Injury Report Form (ODH No 390) has been designed to report acute hospitalized burns, traumatic spinal cord injuries, and drownings/near drownings. The self-addressed, postage-paid report form is designed to collect basic demographic and epidemiologic information about these injuries.

In 1988, these three types accounted for 951 injuries; 261 (27%) were fatal. The number of deaths for the three reportable injuries was more than double the 125 deaths from all 45 reportable communicable diseases in Oklahoma. The ultimate goal of the program is to design intervention strategies to prevent the occurrence of these injuries.

The development of an intervention targeting house fires is one example of how the program functions. Between September 1987 and March 1989, 215 persons were injured as a result of 167 house fires; 146 (68%) died. The mortality rate was highest in children and the elderly, and injury rates were 1.5 to 2 times higher for nonwhites than for whites. The most common causes of the fires were cigarettes/smoking (23%), playing with fire (18%), and heating devices (17%). Seventy-five percent (123/165) of the persons *without* functioning smoke alarms died, compared to 24% (7/29) of persons who had functional smoke alarms. City-specific housefire injury rates were calculated for cities having at least 10 injuries associated with at least 10 fires. A spot map was drawn for the 46 Oklahoma City injuries which revealed that 78% (36/46) of the injuries occurred in south Oklahoma City.

The Injury Epidemiology Division has designed an intervention program targeting the inner part of south Oklahoma City with emphasis on the use of smoke alarms. The division will evaluate the program, using the surveillance system to measure injury rates in the targeted area as well as in areas where there was no intervention. If the program significantly reduces injury and death, it could serve as a model for other communities around the state.

CDC sponsors blind study

Health department wins grant to study HIV in childbearing women

The Oklahoma State Department of Health has won a federal grant to conduct an unlinked seroprevalence survey to obtain estimates of the current levels of human immunodeficiency virus (HIV) infection among childbearing women in Oklahoma and to follow trends over time as a way of monitoring the HIV epidemic.

Dried filter paper blood spots submitted from all newborns for metabolic screening will be tested for antibodies to HIV infection using a technology originally pioneered by the Massachusetts State Health Department. Since HIV antibodies are passively transferred across the placenta, the HIV antibody status of newborns will reflect infection of their mothers.

The survey will be conducted in an unlinked, or blinded, fashion in which all names and other personal identifiers will be removed from the blood specimens prior to any HIV testing. In accordance with the study's protocol, there will be no way to link any person's name with a test result. In addition, no HIV testing will be performed on a specimen until all of the newborn metabolic screening tests are completed.

This is one of several studies sponsored by the Centers for Disease Control to measure the extent to which HIV infection has spread through the US population. Unlinked seroprevalence studies of childbearing women were first initiated in 20 states in 1988. Oklahoma was among 9 other states to win awards in 1989.

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Avoids violating individual rights

Doctor suggests innovative approach to drug testing in team sports

A letter in the September 1 *Journal of the American Medical Association (JAMA)* proposes a novel solution to the problem of drug use in sports — pool winning team members' urine prior to testing and punish the team, not the guilty athletes.

Writing in response to a December 23/30, 1988 *JAMA* Medical News and Perspective report on drug testing of athletes, Fritz R. Dixon, MD, of Boise, Idaho, says a way to avoid violating individual rights would be to make the team responsible for a player's use of illicit or performance-enhancing drugs.

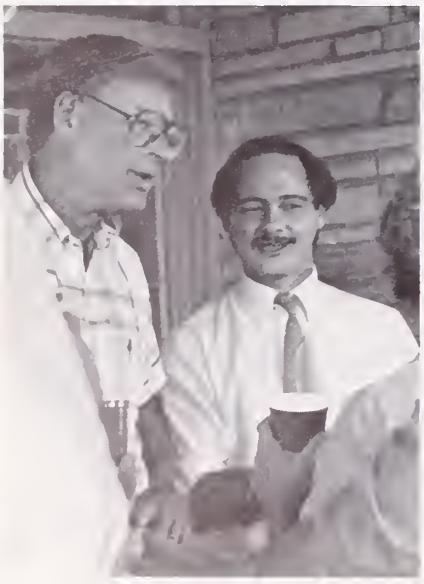
Rules should be adopted that would require all athletes, coaches, and other team members involved on the field or playing floor to contribute urine samples immediately after winning a game, he suggests. The samples would be pooled and a sample of the pooled urine tested. "If the sample is positive, the team loses the competition," Dixon writes.

"No identifiers of individual persons are required," he adds. "All individual records achieved in the game would stand. The score book would otherwise not be harmed. Yards gained, points scored, touchdowns achieved, all on an individual basis, still would be integrated fully into the records. Peer pressure and public opinion would contribute to the ultimate goal: Drug-free sports."

In reply, Virginia S. Cowart, author of the Medical News and Perspective report on athletic drug testing, says Dixon's novel suggestion has merit. "Teams will make serious efforts to stop drug use when they believe it is in their best interests to do so," she writes. "With the emphasis always on winning, and the financial rewards so great, it is not hard to see why many teams believe that using performance-enhancing drugs is in their best interest. The restoration of a sense of ethics would go a long way toward more truly sportsmanlike behavior in both individual and team sports," she concludes.

Annual August Event

OSMA sponsors picnic in OKC to welcome new medical students



At left, OSMA President John R. Alexander, MD, Tulsa, talks with Tim Cathey, MS III, vice-president of the OSMA Student Section. Center, Brad Stephens, MS II, (l) follows Richard Culbert, MS I, (c) through the serving line. At right, making their selections, are first-year students Jon Lorenzino, Cynthia Silfer, and Leon Ferguson.

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Accretion increases costs

Hospitals adopt new technologies without abandoning older methods

Hospitals are slow to abandon older, outmoded diagnostic tests and may be contributing unnecessarily to the increasing cost of medical care when they use them in addition to newer diagnostic techniques, says a study in the September 1 *Journal of the American Medical Association (JAMA)*.

In a study of 63 hospitals in five regions of the country, investigators found that new diagnostic technology appears to be most quickly adopted by large, urban teaching hospitals with high occupancy rates and high proportions of specialty physicians. "However, the adoption of new tests is only sometimes associated with abandonment of the more outmoded services for which the new test could be substituted," say the authors, John M. Eisenberg, MD, MBA, and colleagues at the University of Pennsylvania, Philadelphia. "A possible reason for the higher costs of certain hospitals might be their increased adoption of expensive new technology combined with reluctance to abandon outdated older technology."

The authors studied the hospitals' use of five outmoded diagnostic tests along with newer procedures that could replace them, from 1978 through 1980. One of the older tests studied was oral cholecystography, which is usually used to visualize gallstones. The authors found that during the three-year study period, the use of gallbladder ultrasound — a newer, superior method of imaging gallstones — increased significantly, but they found only a small concurrent decrease in the use of oral cholecystograms. "For the other newer tests examined, increased use was not accompanied by significantly decreased use of the paired older service," they report.

The authors note, "if physicians are uncertain about the accuracy of one test, or if they want to take advantage of a test's complementary properties, they may not completely substitute the new test for the old one." They conclude that "diffusion of new diagnostic services occurs gradually and often without concomitant decrease in older, outmoded services; new services generally seem to complement rather than substitute for older ones."

"We found that adoption of new diagnostic technologies by hospitals was correlated with hospital size, the number of residency programs, occupancy rates, and urban location . . . and the proportion of specialists on staff," they report. "Larger hospitals with a greater teaching commitment make a faster transition to the use of new technologies and the abandoment of older ones."

The "added costs of new diagnostic tests may be tempered if the older tests that they replace can be abandoned," the authors suggest. "This gradual accretion of technology, rather than a dynamic process of appropriate adoption and abandonment, may contribute to the increasing cost of medical care," they conclude.

IN MEMORIAM

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1989

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Nevin Wilson Dodd, MD
1912 - 1989

Tulsa physician Nevin W. Dodd, MD, died July 31, 1989. Dr Dodd was graduated from the University of Tennessee College of Medicine in 1939 and specialized in occupational medicine. A commander in the US Naval Reserve, he served as an aviation medical examiner in the US Navy during World War II and in the US Marines during the Korean conflict.
Dr Dodd, a native of Traer, Iowa, made his home in Tulsa after completing his military service. He was a Life Member of the OSMA.

Alwyn Travers Kornblee, MD
1912 - 1989

OSMA Life Member Alwyn T. Kornblee, MD, a retired dermatologist, died August 7, 1989, in Tulsa. A 1937 graduate of Rush Medical College, Chicago, Dr Kornblee's Tulsa practice was interrupted by service with the US Army from 1942 to 1946 and residency training at New York's Bellevue Hospital. In addition to his work in Tulsa, he was a consultant at both the Veterans Administration Hospital in Muskogee and the Indian Hospital in Claremore.

Edward Keats Norfleet, MD
1924 - 1989

Retired psychiatrist Edward K. Norfleet, MD, died August 13, 1989, in Vinita. Dr Norfleet, a past vice-president, board member, and Life Member of the OSMA, was born in Des Arc, Ark, and graduated from the University of Arkansas Medical School in 1952. A US Army veteran of World War II, he practiced in Sapulpa, Bristow, and Tulsa before moving to Vinita five years ago. Dr Norfleet was an associate professor emeritus at the University of Oklahoma College of Medicine–Tulsa and was featured as a Leader in Medicine in the September 1984 JOURNAL.

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Sickle Cell Anemia and Thalassemia: A Primer for Health Care Professionals. By R.J. Huntsman, MD. St. John's, Newfoundland, Canada: The Canadian Sickle Cell Society, 1987. Pp 219, price, $10.00

This book is published by the Canadian Sickle Cell Society, and its purchase contributes to the funding of the society. The author states in his foreword that the book has been written in the hope of "providing information in an inexpensive format" to the practitioner who cares for victims of these diseases; in this, the primer serves its purpose well.

The book is divided into two sections: Section I is clinically oriented, and the author provides an overview of some of the rarer hemoglobinopathies in addition to sickle cell anemia and thalassemia. His discussions of the clinical presentations and laboratory evaluations of each disease process are concise and informative. His recommendations for community screening also are very interesting. The reader is challenged with eight clinical problems at the conclusion of this section, and the author provides well-organized approaches to the solutions of these problems.

Section II contains a review of basic scientific knowledge essential to a practitioner's understanding of these diseases. The author devotes some discussion to recent advances in the field of molecular biology. The book is enhanced by an additional section of tables and figures, and an excellent glossary of terms to assist the reader.

The book is not intended to be a comprehensive reference text; it provides the reader with a concise overview of the management of sickle cell anemia and thalassemia. The author treats his subject matter with skill, and his enthusiasm for his chosen field is evident. For a health care professional who encounters patients suffering from hemoglobinopathies, this primer is recommended.

—Kathlene S. Waller, MD
Oklahoma City

Neonatal and Pediatric Respiratory Medicine. Edited by Anthony D. Milner and Richard J. Martin. London, UK: Butterworths, 1985, pp 242, price not given.

Neonatal and Pediatric Respiratory Medicine is an interesting volume in Butterworths' *International Medicine* series. Approximately half of the chapters were written by North Americans, with the remaining written by British and Australian authors. It should be stated at the outset that this collection of independent chapters was not intended to be a text of pediatric respiratory medicine; rather, it is a compilation of "personal statements on controversial or rapidly changing topics." The question that must be confronted in reviewing a volume such as this is: would it meaningfully add to a library that already contains a standard pediatric and neonatology text? This question is partially answered by a review of the table of contents:

1. Resuscitation of the newborn;
2. Regulation of respiratory muscles in infants and children;
3. High frequency ventilation;
4. Bronchopulmonary dysplasia;
5. Cardiorespiratory monitoring in sudden infant death syndrome;
6. The flexible fiberoptic bronchoscope as a diagnostic and therapeutic tool in infants;
7. The diagnosis and management of upper airway obstruction;
8. The lung in immunologic disease;
9. Bronchial responsiveness in children: a clinical view;
10. Allergy and infection in cystic fibrosis; and
11. Outcome of respiratory disease in childhood.

Although thorough, chapters one, three, and seven add little to the material covered in standard texts. The remaining chapters all address aspects of

(continued)

REACTION TIME

Editor's response to August letter distresses physician in Moyers

To the Editor: I was shocked and disappointed at your unexpected gibe at Dr Paul A. Byrne, MD, [REACTION TIME, August 1989] who was thoughtful enough to take the time to write you about a matter of great concern to him and all ethical, moral doctors.

In my humble opinion, answers such as this are not worthy of such a respected physician as yourself, who represents us all as editor of our medical journal. I sincerely thank Dr Byrne for his opinion and give it great weight. I'm sure your answer was written in haste and you have since regretted it. I apologize to Dr Byrne.

—Robert L. Shore, MD
Moyers

the particular subjects that are omitted or slighted in standard texts.

The chapter on monitoring and sudden infant death syndrome is a refreshingly honest summary of the available information on the various forms of evaluation of cardiorespiratory regulation in infants. Although the lack of efficacy in preventing sudden infant death syndrome (SIDS) is discouraging, the uninflated presentation of the data by an investigator active in the field (Joan Hodgman) is remarkable for its organization and clarity.

The review of high frequency ventilation is quite good and surprisingly up to date. However, as the high frequency oscillator continues to be evaluated in ongoing trials, an avalanche of information will likely outdate this chapter in the near future. This is not to mention the issue of how surfactant replacement, soon to be introduced into clinical practice, will interact with the various modes of ventilation.

Perhaps the most useful chapter covers the use of the flexible fiberoptic bronchoscope. Practitioners who have occasion to consult pulmonologists will find this chapter interesting and relevant. This is just the type of discussion that is omitted from general texts but will be appreciated by the practicing pediatrician. By contrast, the chapter on allergy and infections in cystic fibrosis will find a limited audience.

The chapter on bronchial responsiveness is a very interesting account of the author's large personal experience with the use of pulmonary function testing in children with hyper-reactive airway disease at London's Hammersmith hospital. The chapter on the outcome of respiratory disease in childhood is a disappointing attempt at summarizing the data relating hyper-reactive airway disease in childhood to adult morbidity. Much data is presented, but it is not cohesive and ultimately little is learned.

Conspicuous by their absence are discussions on the role of white cells and arachadonic acid metabolites in airway smooth muscle reactivity, surfactant replacement, and extracorporeal membrane oxygenation (certainly the latter qualifies as controversial). A discussion of the role of corticosteroids in the treatment of various pediatric respiratory disorders would have been welcome.

On the whole, the volume is an interesting collection of discussions that would be a valuable addition to a library that contains a recent edition of a pediatric and neonatology text.

—Cody Arnold, MD
Fort Worth

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Action: Yohimbine blocks presynaptic alpha-2 adrenergic receptors. Its action on peripheral blood vessels resembles that of reserpine, though it is weaker and of short duration. Yohimbine's peripheral autonomic nervous system effect is to increase parasympathetic (cholinergic) and decrease sympathetic (adrenergic) activity. It is to be noted that in male sexual performance, erection is linked to cholinergic activity and to alpha-2 adrenergic blockade which may theoretically result in increased penile inflow, decreased penile outflow or both.

Yohimbine exerts a stimulating action on the mood and may increase anxiety. Such actions have not been adequately studied or related to dosage although they appear to require high doses of the drug. Yohimbine has a mild anti-diuretic action, probably via stimulation of hypothalmic centers and release of posterior pituitary hormone.

Reportedly, Yohimbine exerts no significant influence on cardiac stimulation and other effects mediated by B-adrenergic receptors, its effect on blood pressure, if any, would be to lower it; however no adequate studies are at hand to quantitate this effect in terms of Yohimbine dosage.

Indications: Yocon® is indicated as a sympathicolytic and mydriatric. It may have activity as an aphrodisiac.

Contraindications: Renal diseases, and patient's sensitive to the drug. In view of the limited and inadequate information at hand, no precise tabulation can be offered of additional contraindications.

Warning: Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

Adverse Reactions: Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral a-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.[1,2] Also dizziness, headache, skin flushing reported when used orally.[1,3]

Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.[1,3,4] 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to ½ tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.[3]

How Supplied: Oral tablets of Yocon® 1/12 gr. 5.4 mg in bottles of 100's NDC 53159-001-01 and 1000's NDC 53159-001-10.

References:
1. A. Morales et al., New England Journal of Medicine: 1221, November 12, 1981.
2. Goodman, Gilman — The Pharmacological basis of Therapeutics 6th ed., p. 176-188. McMillan December Rev. 1/85.
3. Weekly Urological Clinical letter, 27:2, July 4, 1983.
4. A. Morales et al., The Journal of Urology 128: 45-47, 1982.

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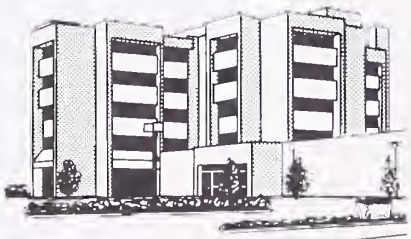

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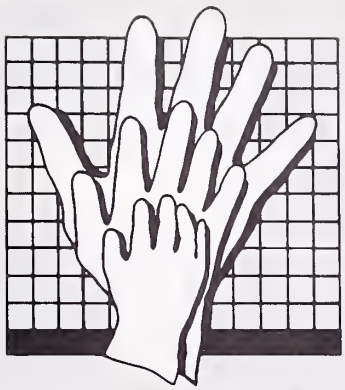

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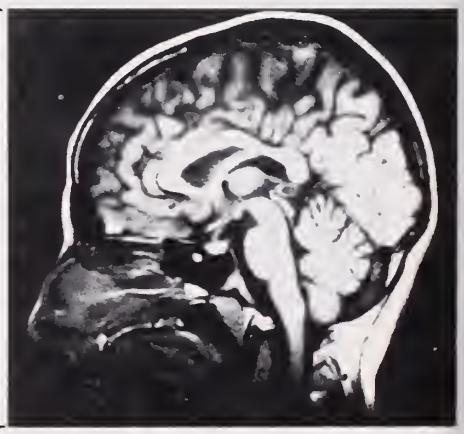

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INSTRUCTIONS FOR AUTHORS

Contributions

Articles submitted for publication, including Annual Meeting papers, become the sole property of the JOURNAL and must not have been published elsewhere. The Editorial Board reserves the right to edit any material submitted. Manuscripts must be typewritten, double-spaced, and submitted in duplicate. Receipt of manuscripts will be acknowledged, and unpublished manuscripts will be returned. The JOURNAL does not assume responsibility for the statements or opinions of any contributor.

Style

All manuscripts should adhere to the style adopted by the American Medical Association as illustrated in *JAMA* and detailed in the AMA's *Manual for Authors & Editors*. Footnotes, bibliographies, and legends for illustrations should be typewritten, double-spaced, on separate sheets. References are to be listed in the order of their appearance in the article.

Illustrations

Illustrations other than the author's will not be accepted for publication unless accompanied by written permission from the original source. Illustrations should be labeled with the author's name and must be numbered in the order in which they are referred to in the article. The quality of all illustrations must be in keeping with the quality of the magazine.

News

Readers are encouraged to submit news items of interest to Oklahoma physicians. Where dates of meetings, etc, are important, please remember that each issue closes on the first day of the *preceding* month and reaches subscribers in the latter half of the month of publication.

Reprints

Authors will receive reprint order forms from the Transcript Press, 222 East Eufaula, Norman, Oklahoma 73069, prior to publication of their articles. Other requests for reprints must be made to the Transcript Press within 30 days after publication.

Back Issues

Microfilm copies of back issues of the JOURNAL can be purchased from University Microfilms International, 300 North Zeeb Road, Ann Arbor, Michigan 48106.

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What *Is* AMA-ERF?

American Medical Association Education and Research Foundation (AMA-ERF) — What does it mean to you? Why should you support it? These are the questions that will be answered in medical society and auxiliary publications across the nation as the result of a publicity blitz launched by the AMA Auxiliary's AMA-ERF Committee. More than ever, physicians and their spouses need to be reminded how important it is that they support medical education today and why AMA-ERF is the vehicle through which to do it.

The AMA-ERF was established over 35 years ago to help support quality education in the nation's medical schools. Since that time, the foundation has distributed more than $45 million in gifts to medical schools and guaranteed over $95 million in loans benefiting more than 40,000 medical students, interns, and residents.

The individual contributor designates to which medical school his/her tax-deductible donation is given. The contributor also chooses between the Medical School Excellence Fund and the Medical Student Assistance Fund. The Medical School Excellence Fund provides grants to medical schools to use as they see fit — for building improvements, faculty salaries, library books, or student loans and grants. The Medical Student Assistance Fund provides money to medical schools to use in direct financial aid to students.

In addition to these funds, the foundation has a Development Fund, used at the discretion of the AMA-ERF Board of Directors to support pilot and experimental health and medical programs, and Categorical Funds, which are provided to specific research areas that last year included biomedical research in rheumatoid arthritis and the origin of AIDS in the United States.

The auxiliary employs several methods of fund-raising for AMA-ERF. The most widely used, totally tax deductible fund-raiser is the Holiday Sharing Card. Rather than send individual holiday greetings, physicians and their spouses make a contribution to a "shared" card, with total monies derived benefiting AMA-ERF. Last year, $980,000 was raised. In addition to the Sharing Card, some auxiliaries sell Christmas cards, with the AMA-ERF receiving the sales commission.

A special and thoughtful way to mark the passing of a colleague, friend, or family member is by sending the AMA-ERF Memorial Card, stating that a donation has been made in memory of the deceased. The Value of Your Service Card is a unique way to say "thank you" for professional courtesies, to express appreciation to organizations and businesses for their support, to thank speakers, and to honor someone for a task well done. In addition to these projects, most auxiliaries have annual fund-raisers, ranging from gala dinner dances and raffles for cruises to simple garage and book sales.

Now more than ever, we want the medical community to know the importance of their support for the foundation if we are to continue to support quality medical education in the United States. We want the medical community to feel a responsibility to make sure medical schools have the money to train their students to maintain the quality of medical care that today's physicians have worked so hard to establish.

We want to enhance the AMA-ERF's goal this year, which is to educate ourselves about AMA-ERF and to support it financially. To attain these goals, we need to start now! Be generous in your donations to this charitable cause. Support your auxiliary's fund-raisers. The extraordinary fund-raising efforts of the AMA Auxiliary and the generosity of contributing medical families have secured AMA-ERF's past effectiveness and will assure its future success.

—Patricia Bass
OSMAA AMA-ERF Chairman

■ **The Oklahoma Board of Medical Licensure** and Supervision has established a new category of licensure for retired physicians who specifically apply for it. The fee for the new "retired" license is $50 and is paid only once for the duration of the retirement; there is no annual renewal fee. A physician who elects the "retired" status is allowed to use the title "physician" or "MD (Ret.)." However, he or she is not allowed to practice medicine in any form, no matter how limited.

Should the physician wish to re-enter practice, he or she must make application to the secretary of the board and meet the required criteria, which may include physical or psychological examination to determine competency to practice, presentation of continuing medical education hours completed, and results of a special purpose examination.

■ **Co-chairmen John R. Alexander, MD, Tulsa,** and Larry L. Long, MD, Oklahoma City, are announcing the formation of the Physicians for Boren Committee. The group will host a fund-raiser at the Waterford Hotel in Oklahoma City on Sunday, November 12. Physicians who attend will meet with their colleagues and Senator David Boren to discuss current issues and mutual concerns. Watch for details in the mail.

■ **F. Daniel Duffy, MD, is the recipient of this** year's Stanton L. Young Master Teaching Award at the University of Oklahoma Health Sciences Center (OUHSC). Dr Duffy, a graduate of Temple University School of Medicine in Philadelphia, is professor and chairman of the Department of Internal Medicine at the OU College of Medicine–Tulsa.

■ **The Fourteenth Annual Fall Educational** Meeting, "Current Concepts in Occupational Medicine," will be held in Tulsa on Friday and Saturday, November 10 and 11. For information, contact William Gillock, MD, (918) 836-5406.

■ **Beaver's Bend State Park will be the site of** the Oklahoma Physicians Second Annual Fall Seminar next month. Accommodations for the meeting, to be held Friday through Sunday, November 10-12, are available on a first come, first served basis. Registration fee for the meeting is $185, with a discount available upon request to retired physicians. The fee includes continental breakfasts, hospitality center, and evening social hour cookouts. An additional $40 allows spouses to attend all social functions. For information and registration contact Contemporary Medical Educators, c/o Irwin H. Brown, MD, Doctors' Medical Plaza-South, 3435 NW 56th Street, #206, Oklahoma City, OK 73112, (405) 946-0548.

■ **Oklahoma City physician Roy L. DeHart, MD,** has been elected president of the Oklahoma Occupational Medicine Association, a component of the American College of Occupational Medicine. Dr DeHart is professor and director of the OUHSC Division of Occupational Medicine.

■ **The Oklahoma Chapter of the American** Academy of Family Physicians has won a first place award from the AAFP for its 1988 member recruiting efforts. In competition among chapters with from 100 to 199 potential resident members, Oklahoma tied with Georgia and Kansas in achieving a 100% resident membership. Accepting the award for his chapter was Oklahoma City physician Charles E. Womack, MD.

■ **John I. Fishburne, Jr., MD, Oklahoma City, is** the recipient of the 1989 Distinguished Alumnus Award from the Medical College of South Carolina, Charleston. Dr Fishburne is professor and chairman of OUHSC's Department of Obstetrics and Gynecology and adjunct professor of anesthesiology.

■ **Physicians are invited to submit their best** photographs and slides for use on the JOURNAL's cover. Both black-and-white and color work is needed. For details, call the JOURNAL office, (405) 843-9571 or 1-800-522-9452.

■ **Three faculty members at the OU College of** Medicine–Tulsa, have been elected to positions in the Oklahoma Chapter of the American Academy of Pediatrics. The chapter's new president is Bernard J. McGuire, Jr., MD. G. Kevin Donovan, MD, is chairman of the chapter's membership committee, and Robert K. Endres, MD, is editor of *The OK Pediatrician,* the chapter newsletter.

■ **The 84th Annual Meeting of the OSMA House** of Delegates will be held May 3-5, 1990, at the Marriott Hotel in Oklahoma City. The date noted in last month's JOURNAL was incorrect.

VASOTEC®

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VASOTEC is available in 2.5-mg, 5-mg, 10-mg, and 20-mg tablet strengths.

Contraindications: VASOTEC® (Enalapril Maleate, MSD) is contraindicated in patients who are hypersensitive to this product and in patients with a history of angioedema related to previous treatment with an ACE inhibitor.

Warnings: *Angioedema:* Angioedema of the face, extremities, lips, tongue, glottis, and/or larynx has been reported in patients treated with ACE inhibitors, including VASOTEC. In such cases, VASOTEC should be promptly discontinued and the patient carefully observed until the swelling disappears. In instances where swelling has been confined to the face and lips, the condition has generally resolved without treatment, although antihistamines have been useful in relieving symptoms. Angioedema associated with laryngeal edema may be fatal. **Where there is involvement of the tongue, glottis, or larynx likely to cause airway obstruction, appropriate therapy, e.g., subcutaneous epinephrine solution 1:1000 (0.3 mL to 0.5 mL), should be promptly administered.** (See ADVERSE REACTIONS.)

Hypotension: Excessive hypotension is rare in uncomplicated hypertensive patients treated with VASOTEC alone. Heart failure patients given VASOTEC commonly have some reduction in blood pressure, especially with the first dose, but discontinuation of therapy for continuing symptomatic hypotension usually is not necessary when dosing instructions are followed; caution should be observed when initiating therapy. (See DOSAGE AND ADMINISTRATION.) Patients at risk for excessive hypotension, sometimes associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death, include those with the following conditions or characteristics: heart failure, hyponatremia, high-dose diuretic therapy, recent intensive diuresis or increase in diuretic dose, renal dialysis, or severe volume and/or salt depletion of any etiology. If may be advisable to eliminate the diuretic (except in heart failure patients), reduce the diuretic dose, or increase salt intake cautiously before initiating therapy with VASOTEC in patients at risk for excessive hypotension who are able to tolerate such adjustments. (See PRECAUTIONS, *Drug Interactions* and ADVERSE REACTIONS.) In patients at risk for excessive hypotension, therapy should be started under very close medical supervision and such patients should be followed closely for the first two weeks of treatment and whenever the dose of enalapril and/or diuretic is increased. Similar considerations may apply to patients with ischemic heart disease or cardiovascular disease in whom an excessive fall in blood pressure could result in a myocardial infarction or cerebrovascular accident. If excessive hypotension occurs, the patient should be placed in supine position and, if necessary, receive an intravenous infusion of normal saline. A transient hypotensive response is not a contraindication to further doses of VASOTEC, which usually can be given without difficulty once the blood pressure has stabilized. If symptomatic hypotension develops, a dose reduction or discontinuation of VASOTEC or concomitant diuretic may be necessary.

Neutropenia/Agranulocytosis: Another ACE inhibitor, captopril, has been shown to cause agranulocytosis and bone marrow depression, rarely in uncomplicated patients but more frequently in patients with renal impairment, especially if they also have a collagen vascular disease. Available data from clinical trials of enalapril are insufficient to show that enalapril does not cause agranulocytosis at similar rates. Foreign marketing experience has revealed several cases of neutropenia or agranulocytosis in which a causal relationship to enalapril cannot be excluded. Periodic monitoring of white blood cell counts in patients with collagen vascular disease and renal disease should be considered.

Precautions: *General: Impaired Renal Function:* As a consequence of inhibiting the renin-angiotensin-aldosterone system, changes in renal function may be anticipated in susceptible individuals. In patients with severe heart failure whose renal function may depend on the activity of the renin-angiotensin-aldosterone system, treatment with ACE inhibitors, including VASOTEC, may be associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death.

In clinical studies in hypertensive patients with unilateral or bilateral renal artery stenosis, increases in blood urea nitrogen and serum creatinine were observed in 20% of patients. These increases were almost always reversible upon discontinuation of enalapril and/or diuretic therapy. In such patients, renal function should be monitored during the first few weeks of therapy.

Some patients with hypertension or heart failure with no apparent preexisting renal vascular disease have developed increases in blood urea and serum creatinine, usually minor and transient, especially when VASOTEC has been given concomitantly with a diuretic. This is more likely to occur in patients with preexisting renal impairment. Dosage reduction and/or discontinuation of the diuretic and/or VASOTEC may be required.

Evaluation of patients with hypertension or heart failure should always include assessment of renal function. (See DOSAGE AND ADMINISTRATION.)

Hyperkalemia: Elevated serum potassium (> 5.7 mEq/L) was observed in approximately 1% of hypertensive patients in clinical trials. In most cases these were isolated values which resolved despite continued therapy. Hyperkalemia was a cause of discontinuation of therapy in 0.28% of hypertensive patients. In clinical trials in heart failure, hyperkalemia was observed in 3.8% of patients, but was not a cause for discontinuation.

Risk factors for the development of hyperkalemia include renal insufficiency, diabetes mellitus, and the concomitant use of potassium-sparing diuretics, potassium supplements, and/or potassium-containing salt substitutes, which should be used cautiously, if at all, with VASOTEC. (See *Drug Interactions.*)

Surgery/Anesthesia: In patients undergoing major surgery or during anesthesia with agents that produce hypotension, enalapril may block angiotensin II formation secondary to compensatory renin release. If hypotension occurs and is considered to be due to this mechanism, it can be corrected by volume expansion.

Information for Patients:

Angioedema: Angioedema, including laryngeal edema, may occur especially following the first dose of enalapril. Patients should be so advised and told to report immediately any signs or symptoms suggesting angioedema (swelling of face, extremities, eyes, lips, tongue, difficulty in swallowing or breathing) and to take no more drug until they have consulted with the prescribing physician.

Hypotension: Patients should be cautioned to report lightheadedness especially during the first few days of therapy. If actual syncope occurs, the patients should be told to discontinue the drug until they have consulted with the prescribing physician.

All patients should be cautioned that excessive perspiration and dehydration may lead to an excessive fall in blood pressure because of reduction in fluid volume. Other causes of volume depletion such as vomiting or diarrhea may also lead to a fall in blood pressure; patients should be advised to consult with the physician.

Hyperkalemia: Patients should be told not to use salt substitutes containing potassium without consulting their physician.

Neutropenia: Patients should be told to report promptly any indication of infection (e.g., sore throat, fever) which may be a sign of neutropenia.

NOTE: As with many other drugs, certain advice to patients being treated with enalapril is warranted. This information is intended to aid in the safe and effective use of this medication. It is not a disclosure of all possible adverse or intended effects.

Drug Interactions:

Hypotension: Patients on Diuretic Therapy: Patients on diuretics and especially those in whom diuretic therapy was recently instituted may occasionally experience an excessive reduction of blood pressure after initiation of therapy with enalapril. The possibility of hypotensive effects with enalapril can be minimized by either discontinuing the diuretic or increasing the salt intake prior to initiation of treatment with enalapril. If it is necessary to continue the diuretic, provide close medical supervision after the initial dose for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and DOSAGE AND ADMINISTRATION.)

Agents Causing Renin Release: The antihypertensive effect of VASOTEC is augmented by antihypertensive agents that cause renin release (e.g., diuretics).

Other Cardiovascular Agents: VASOTEC has been used concomitantly with beta-adrenergic-blocking agents, methyldopa, nitrates, calcium-blocking agents, hydralazine, prazosin, and digoxin without evidence of clinically significant adverse interactions.

Agents Increasing Serum Potassium: VASOTEC attenuates potassium loss caused by thiazide-type diuretics. Potassium-sparing diuretics (e.g., spironolactone, triamterene, or amiloride), potassium supplements, or potassium-containing salt substitutes may lead to significant increases in serum potassium. Therefore, if concomitant use of these agents is indicated because of demonstrated hypokalemia, they should be used with caution and with frequent monitoring of serum potassium. Potassium-sparing agents should generally not be used in patients with heart failure receiving VASOTEC.

Lithium: A few cases of lithium toxicity have been reported in patients receiving concomitant VASOTEC and lithium and are reversible upon discontinuation of both drugs. Although a causal relationship has not been established, it is recommended that caution be exercised when lithium is used concomitantly with VASOTEC and serum lithium levels should be monitored frequently.

Pregnancy — Category C: There was no fetotoxicity or teratogenicity in rats treated with up to 200 mg/kg/day of enalapril (33 times the maximum human dose). Fetotoxicity, expressed as a decrease in average fetal weight, occurred in rats given 1200 mg/kg/day of enalapril but did not occur when these animals were supplemented with saline. Enalapril was not teratogenic in rabbits. However, maternal and fetal toxicity occurred in some rabbits at doses of 1 mg/kg/day or more. Saline supplementation prevented the maternal and fetal toxicity seen at doses of 3 and 10 mg/kg/day, but not at 1 mg/kg/day (50 times the maximum human dose).

Radioactivity was found to cross the placenta following administration of labeled enalapril to pregnant hamsters.

There are no adequate and well-controlled studies of enalapril in pregnant women. However, data are available that show enalapril crosses the human placenta. Because the risk of fetal toxicity with the use of ACE inhibitors has not been clearly defined, VASOTEC® (Enalapril Maleate, MSD) should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Postmarketing experience with all ACE inhibitors thus far suggests the following with regard to pregnancy outcome. Inadvertent exposure limited to the first trimester of pregnancy has not been reported to affect fetal outcome adversely. Fetal exposure during the second and third trimesters of pregnancy has been associated with fetal and neonatal morbidity and mortality.

When ACE inhibitors are used during the later stages of pregnancy, there have been reports of hypotension and decreased renal perfusion in the newborn. Oligohydramnios in the mother has also been reported, presumably representing decreased renal function in the fetus. Infants exposed *in utero* to ACE inhibitors should be closely observed for hypotension, oliguria, and hyperkalemia. If oliguria occurs, attention should be directed toward support of blood pressure and renal perfusion with the administration of fluids and pressors as appropriate. Problems associated with prematurity such as patent ductus arteriosus have occurred in association with maternal use of ACE inhibitors, but it is not clear whether they are related to ACE inhibition, maternal hypertension, or the underlying prematurity.

Nursing Mothers: Milk in lactating rats contains radioactivity following administration of ^{14}C enalapril maleate. It is not known whether this drug is secreted in human milk. Because many drugs are secreted in human milk, caution should be exercised when VASOTEC is given to a nursing mother.

Pediatric Use: Safety and effectiveness in children have not been established.

Adverse Reactions: VASOTEC has been evaluated for safety in more than 10,000 patients, including over 1000 patients treated for one year or more. VASOTEC has been found to be generally well tolerated in controlled clinical trials involving 2987 patients.

HYPERTENSION: The most frequent clinical adverse experiences in controlled trials were: headache (5.2%), dizziness (4.3%), and fatigue (3%).

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in controlled clinical trials were: diarrhea (1.4%), nausea (1.4%), rash (1.4%), cough (1.3%), orthostatic effects (1.2%), and asthenia (1.1%).

HEART FAILURE: The most frequent clinical adverse experiences in both controlled and uncontrolled trials were: dizziness (7.9%), hypotension (6.7%), orthostatic effects (2.2%), syncope (2.2%), cough (2.2%), chest pain (2.1%), and diarrhea (2.1%).

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in both controlled and uncontrolled clinical trials were: fatigue (1.8%), headache (1.8%), abdominal pain (1.6%), asthenia (1.6%), orthostatic hypotension (1.6%), vertigo (1.6%), angina pectoris (1.5%), nausea (1.3%), vomiting (1.3%), bronchitis (1.3%), dyspnea (1.3%), urinary tract infection (1.3%), rash (1.3%), and myocardial infarction (1.2%).

Other serious clinical adverse experiences occurring since the drug was marketed or adverse experiences occurring in 0.5% to 1% of patients with hypertension or heart failure in clinical trials in order of decreasing severity within each category:

Cardiovascular: Cardiac arrest; myocardial infarction or cerebrovascular accident, possibly secondary to excessive hypotension in high-risk patients (see WARNINGS, *Hypotension*); cardiac arrest, pulmonary embolism and infarction; rhythm disturbances; atrial fibrillation; palpitation.

Digestive: Ileus, pancreatitis, hepatitis or cholestatic jaundice, melena, anorexia, dyspepsia, constipation, glossitis.

Nervous/Psychiatric: Depression, confusion, ataxia, somnolence, insomnia, nervousness, paresthesia.

Urogenital: Renal failure, oliguria, renal dysfunction (see PRECAUTIONS and DOSAGE AND ADMINISTRATION).

Respiratory: Bronchospasm, rhinorrhea, asthma, upper respiratory infection.

Skin: Herpes zoster, pruritus, alopecia, flushing, photosensitivity.

Other: Vasculitis, muscle cramps, hyperhidrosis, impotence, blurred vision, taste alteration, tinnitus.

A symptom complex has been reported which may include fever, myalgia, and arthralgia; an elevated erythrocyte sedimentation rate may be present. Rash or other dermatologic manifestations may occur. These symptoms have disappeared after discontinuation of therapy.

Angioedema: Angioedema has been reported in patients receiving VASOTEC (0.2%). Angioedema associated with laryngeal edema may be fatal. If angioedema of the face, extremities, lips, tongue, glottis, and/or larynx occurs, treatment with VASOTEC should be discontinued and appropriate therapy instituted immediately. (See WARNINGS.)

Hypotension: In the hypertensive patients, hypotension occurred in 0.9% and syncope occurred in 0.5% of patients following the initial dose or during extended therapy. Hypotension or syncope was a cause for discontinuation of therapy in 0.1% of hypertensive patients. In heart failure patients, hypotension occurred in 6.7% and syncope occurred in 2.2% of patients. Hypotension or syncope was a cause for discontinuation of therapy in 1.9% of patients with heart failure. (See WARNINGS.)

Clinical Laboratory Test Findings:

Serum Electrolytes: Hyperkalemia (see PRECAUTIONS), hyponatremia

Creatinine, Blood Urea Nitrogen: In controlled clinical trials, minor increases in blood urea nitrogen and serum creatinine, reversible upon discontinuation of therapy, were observed in about 0.2% of patients with essential hypertension treated with VASOTEC alone. Increases are more likely to occur in patients receiving concomitant diuretics or in patients with renal artery stenosis. (See PRECAUTIONS.) In patients with heart failure who were also receiving diuretics with or without digitalis, increases in blood urea nitrogen or serum creatinine, usually reversible upon discontinuation of VASOTEC and/or other concomitant diuretic therapy, were observed in about 11% of patients. Increases in blood urea nitrogen or creatinine were a cause for discontinuation in 1.2% of patients.

Hemoglobin and Hematocrit: Small decreases in hemoglobin and hematocrit (mean decreases of approximately 0.3 g % and 1.0 vol %, respectively) occur frequently in either hypertension or heart failure patients treated with VASOTEC but are rarely of clinical importance unless another cause of anemia coexists. In clinical trials, less than 0.1% of patients discontinued therapy due to anemia.

Other (Causal Relationship Unknown): In marketing experience, rare cases of neutropenia, thrombocytopenia, and bone marrow depression have been reported.

Liver Function Tests: Elevations of liver enzymes and/or serum bilirubin have occurred.

Dosage and Administration: *Hypertension:* In patients who are currently being treated with a diuretic, symptomatic hypotension occasionally may occur following the initial dose of VASOTEC. The diuretic should, if possible, be discontinued for two to three days before beginning therapy with VASOTEC to reduce the likelihood of hypotension. (See WARNINGS.) If the patient's blood pressure is not controlled with VASOTEC alone, diuretic therapy may be resumed.

If the diuretic cannot be discontinued, an initial dose of 2.5 mg should be used under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and PRECAUTIONS, *Drug Interactions.*)

The recommended initial dose in patients not on diuretics is 5 mg once a day. Dosage should be adjusted according to blood pressure response. The usual dosage range is 10 to 40 mg per day administered in a single dose or in two divided doses. In some patients treated once daily, the antihypertensive effect may diminish toward the end of the dosing interval. In such patients, an increase in dosage or twice-daily administration should be considered. If blood pressure is not controlled with VASOTEC alone, a diuretic may be added.

Concomitant administration of VASOTEC with potassium supplements, potassium salt substitutes, or potassium-sparing diuretics may lead to increases of serum potassium (see PRECAUTIONS).

Dosage Adjustment in Hypertensive Patients with Renal Impairment. The usual dose of enalapril is recommended for patients with a creatinine clearance >30 mL/min (serum creatinine of up to approximately 3 mg/dL). For patients with creatinine clearance ≤30 mL/min (serum creatinine ≥3 mg/dL), the first dose is 2.5 mg once daily. The dosage may be titrated upward until blood pressure is controlled or to a maximum of 40 mg daily.

Heart Failure: VASOTEC is indicated as adjunctive therapy with diuretics and digitalis. The recommended starting dose is 2.5 mg once or twice daily. After the initial dose of VASOTEC, the patient should be observed under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and PRECAUTIONS, *Drug Interactions.*) If possible, the dose of the diuretic should be reduced, which may diminish the likelihood of hypotension. The appearance of hypotension after the initial dose of VASOTEC does not preclude subsequent careful dose titration with the drug, following effective management of the hypotension. The usual therapeutic dosing range for the treatment of heart failure is 5 to 20 mg daily given in two divided doses. The maximum daily dose is 40 mg. Once-daily dosing has been effective in a controlled study, but nearly all patients in this study were given 40 mg, the maximum recommended daily dose, and there has been much more experience with twice-daily dosing. In addition, in a placebo-controlled study which demonstrated reduced mortality in patients with severe heart failure (NYHA Class IV), patients were treated with 2.5 to 40 mg per day of VASOTEC, almost always administered in two divided doses. (See CLINICAL PHARMACOLOGY, *Pharmacodynamics and Clinical Effects.*) Dosage may be adjusted depending upon clinical or hemodynamic response. (See WARNINGS.)

Dosage Adjustment in Heart Failure Patients with Renal Impairment or Hyponatremia: In heart failure patients with hyponatremia (serum sodium <130 mEq/L) or with serum creatinine >1.6 mg/dL, therapy should be initiated at 2.5 mg daily under close medical supervision. (See DOSAGE AND ADMINISTRATION, *Heart Failure,* WARNINGS, and PRECAUTIONS, *Drug Interactions.*) The dose may be increased to 2.5 mg b.i.d., then 5 mg b.i.d. and higher as needed, usually at intervals of four days or more, if at the time of dosage adjustment there is not excessive hypotension or significant deterioration of renal function. The maximum daily dose is 40 mg.

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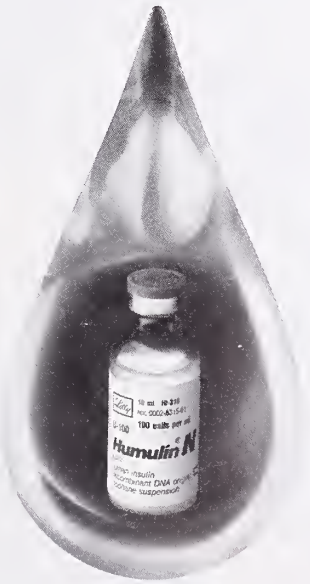

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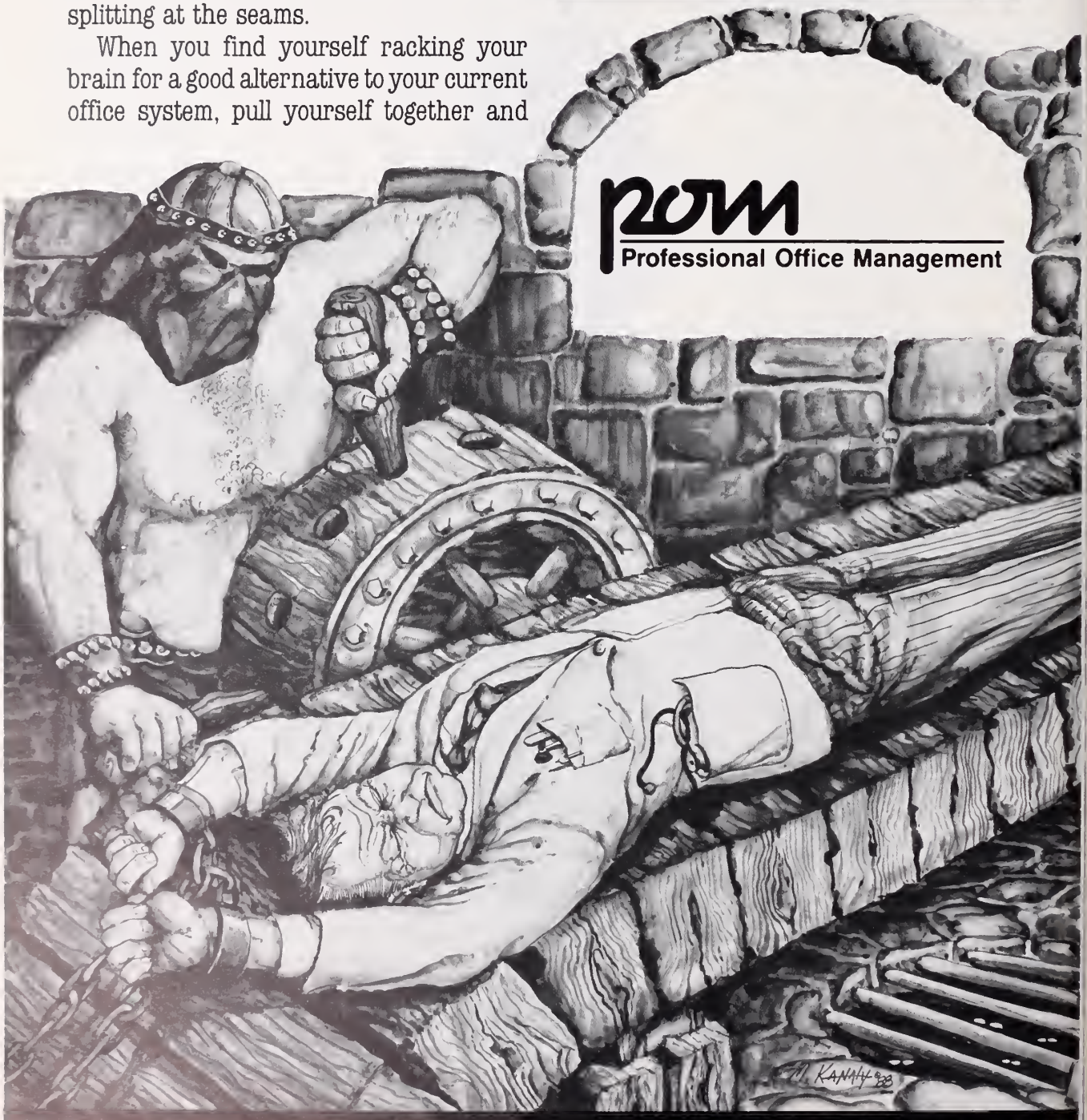

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JOURNAL

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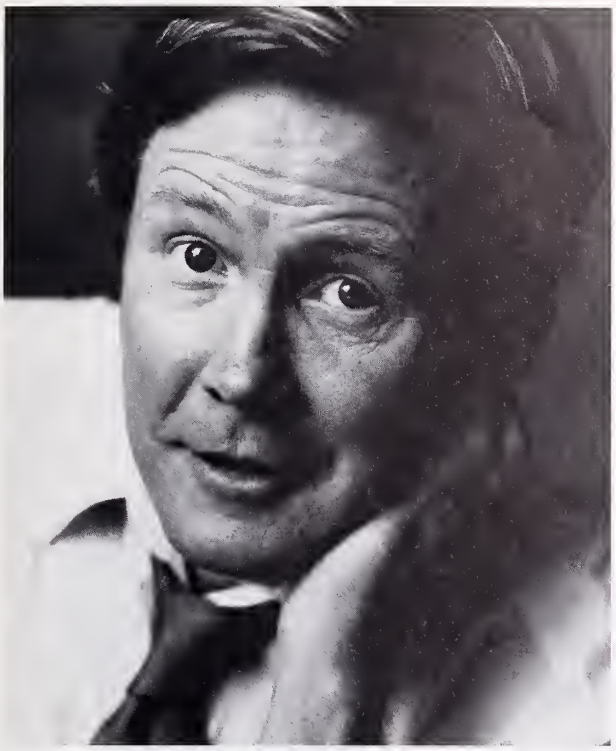

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The Physician as Soothsayer

Traditionally, the physician has been given respect, and sometimes deference, as a learned professional dispensing authoritative advice on difficult problems. Nowadays, it is widely believed that respect for physicians is declining and that deference has become as rare as hen's teeth. There are very few critics who leave the physician on much of a pedestal today. One result is that some physicians are becoming reticent on proffering advice. Soothsaying has fallen on hard times.

But while the traditional respect for physicians has been withering, medical science has become highly effective, and so has the reliability of medical prognoses that are based on valid medical studies. It is true that an ex cathedra edict will no longer be unquestioningly accepted, but it is also true that scientific explanations fall readily on the educated ears of today. The physician still, when speaking as a medical scientist, usually has a profound effect on most hearers.

The adage "Unsought advice is seldom taken" contains a kernel of truth, and this knowledge leads some physicians to restrict their advice. An opportunity to save a life may thus be lost.

Most physicians are logically aware that tobacco use continues to be a major medical problem in the world today, causing most of the lung, larynx, mouth, and esophagus cancers. It is a known co-factor in carcinoma of the bladder, kidney, and pancreas, and is a suspected co-factor in cancer of the cervix and stomach. Tobacco use significantly increases mortality and morbidity in atherosclerosis and other vascular diseases.

All too often the physician hesitates to discuss the effects of tobacco and nicotine unless specifically asked. But the pervasive and malignant results of continued tobacco use are too important to the patient's health to be ignored. We should interject advice or volunteer information to the smoker whenever there is a chance it will be heard.

Everyone knows that nagging at an addict is a useless waste of time. But when a physician is dispensing health advice, to remind the smoking patient of the scientific evidence of tobacco's profound health effects is not carping, but is quite fitting and proper. Nearly all such patients are logically aware of the dangers of using tobacco, but have not yet emotionally decided to quit. One more scientific fact might be the final shove that motivates the patient to really stop.

When the physician, speaking as a medical scientist, has reminded the patient of the health benefits of stopping tobacco use, a beneficent soothsayer role has been reclaimed. It is well to be prepared to give the user the needed counsel and medical support that will assist with withdrawal problems and social re-adaption. The physician unable to provide this support should offer referral to a colleague who can.

One more reiteration of the truth may convince, and motivate, and save a life.

Ray V. McIntyre, M.D.

A Time to Be Positive and Give Thanks!

During this month of usual thanksgiving we could very easily develop a negative attitude and be depressed regarding our chosen profession. Pronouncements of doom and gloom have become common and frequent regarding the practice of medicine over the past decade.

One does not have to look far to find evidence of unfavorable portents. The pool of applicants to our medical schools nationwide, and particularly in Oklahoma, has progressively decreased over the past several years. In speaking to various medical groups and county medical societies in recent months, I have been somewhat shocked by the negative attitude and lack of desire by our physicians and their spouses to encourage their children to pursue a career in medicine. There is a perceived lack of attraction of medical careers.

This most likely has to do with discouragement with the increasing legislative and/or societal interference with the practice of medicine. Other careers are appearing more attractive as medical liability issues, years necessary to complete training, and educational costs escalate. Profound changes are taking place in medical practice as many trends in our society have had significant impact.

We all feel these effects and have been reacting to them, mostly in a negative way. I have felt, for example, that internal medicine is now a dinosaur, a specialty that has served its purpose and is now outdated. Others must feel the same, since the number of graduates electing internal medicine as a specialty has been decreasing. Applications to primary care specialties have decreased nationwide also.

Hopefully this will be just a transient sentiment. We are beginning to witness a newfound respect for tradition, which is on the positive side.

This appraisal of medicine's value and role in society has been going on for several decades, and I feel it has had mostly beneficial results. There is still a satisfaction that one experiences in practicing medicine and interacting with patients and their families over a period of years. This is difficult to achieve with any other career, except perhaps teaching and the ministry.

The rewards that come from the relationships and the expressions of gratitude of individual patients are unique sources of pleasure for physicians. Most physicians are provided a prominent place in their community and generally are well respected. The trust that physicians are given also is unique in our society. We need to re-establish a positive attitude about ourselves and our profession and hang together as physicians. We can receive enormous pleasure as we continue to benefit from these rare privileges granted to us by society. We have a lot to be thankful for.

Platypnea and Orthodeoxia: Surgically Corrected Dyspnea with Recurrence

Arthur S. Harrow, MD; David C. Levin, MD

Sitting up to catch your breath is a well known clinical situation. What diseases are suggested by lying down to catch your breath?

Shortness of breath associated with positional change is a common clinical finding. In conditions such as congestive heart failure, shortness of breath is relieved by raising the trunk to a more erect position. This symptom complex is known as orthopnea. Far less commonly seen is a syndrome of dyspnea worsened by an erect position. This clinical presentation, referred to as platypnea, is an important clinical clue to underlying pulmonary and/or cardiac pathology.

Case Presentation

A 59-year-old white man presented in June 1982 with a four-month history of cough and weight loss; chest roentgenogram revealed a right upper lobe mass. After appropriate medical evaluation, thoracotomy was performed and the mass was found to be a squamous cell carcinoma with hilar node involvement and direct spread to the pleura. Right extrapleural pneumonectomy was performed.

Five months later the patient noted the abrupt onset of shortness of breath which was worse on sitting. Blood gases on 3 liters of oxygen per minute in the supine position revealed pH 7.39, P_ACO_2 59 mmHg, P_AO_2 58 mmHG; gases on 3 liters of oxygen per minute in the sitting position revealed pH 7.44, P_ACO_2 35 mmHg, P_AO_2 37 mmHG. The patient was again discharged on home oxygen. In June 1983, bilateral cardiac catheterization was performed at the Oklahoma City Veterans Administration Medical Center to evaluate his shortness of breath. Oxygen saturations ranged from 97% in the pulmonary vein to 68% in the right ventricle. There was a drop in the oxygen saturation of 4% at the level of the left atrium. Green dye study during catheterization revealed a right-to-left shunt of 1:1.22 at the atrial level in the supine position. Catheterization in the upright position was not performed. A thoracic surgeon was consulted and the patient underwent repair of a patent foramen ovale flap in July 1983. The patient's platypneic symptoms disappeared, and he did well for the next 33 months.

In April 1986 the patient presented to the emergency room at the Veterans Administration Medical Center with complaints of twelve hours of sudden onset shortness of breath worsened by sitting up. Examination revealed dyspnea in the sitting position that improved dramatically on assuming the supine position. Wheezes were present in the left lung; no breath sounds were heard on the right. The cardiac examination was unremarkable. Blood gases in the supine position on 2 liters of oxygen per minute revealed arterial pH 7.37, P_ACO_2 41 mmHg, P_AO_2 92 mmHg. Blood gases in the sitting position revealed arterial pH 7.41, P_ACO_2 37 mmHg, P_AO_2 62 mmHg. Chest roentgenogram revealed a right

From the Department of Internal Medicine, University of Oklahoma Health Sciences Center, Oklahoma City.
Direct correspondence to Arthur S. Harrow, MD, 7660 Parham Road, Richmond, VA 23229.

hydrothorax; the left hemithorax was hyperinflated, but otherwise normal.

The patient was admitted and a resting nuclear ventriculogram was performed in the supine position; it revealed a dilated heart with a left ventricular ejection fraction of 11%. Computed tomography showed displacement of the left mainstem bronchus over the dorsal spine with a question of compression. The patient was treated with digoxin and furosemide with improvement in his dyspnea. Echocardiographic contrast study and cardiac catheterization were performed and failed to reveal any evidence of shunting. No evidence of postural desaturation was seen during catheterization. The patient was discharged with no further explanation found for his recurrent platypnea. Follow-up arterial blood gases on room air were within normal limits without hypoxemia.

Discussion

In 1954 Wright described a patient with progressive shortness of breath associated with erect posture.[1] Since then, there have at least been eighteen patients reported with this unusual syndrome.[2-10]

The clinical presentation of shortness of breath that was worsened by rising was named platypnea by Altman and Robin in 1969.[2] Robin further described the associated postural deoxygenation in 1976, calling this orthodeoxia.[3]

Three subgroups have been identified in the clinical syndrome of platypnea: (1) patients with intracardiac shunts, (2) patients with intrapulmonary shunts, and (3) patients without documented shunting.

Intracardiac Shunts

The largest subgroup (n = 13) among reported patients are those with intracardiac shunts. Of these, three were noted to have atrial septal defects, nine had patent foramina ovale, and one had malformed IVC-atrial junctions with spillover directly into the left atrium.

The first report of surgical therapy for platypnea was by Schnabel,[4] who described a patient with platypnea in the year following right pneumonectomy for carcinoma of the lung. After one year of evaluation, the diagnosis of a right-to-left shunt was considered but discarded because of an essentially normal supine cardiac catheterization. The orthostatic shunt was documented after supine and upright measurement of dye circulation time showed early dye appearance by ear oximetry in the upright position. A patent foramen ovale was found and repaired. During a twenty-two month follow-up, the patient had neither symptoms of platypnea nor orthodeoxia.

Similar cases have been reported by Winters.[5] Begin,[6] Wranne and Tolagen,[7] and LaBresh.[8] The largest series, in which seven patients were described, was reported in 1984 by Seward et al[9] All seven patients had documented intra-atrial right-to-left shunts by cardiac catheterization. Four of the seven had undergone either right or left pneumonectomy in the past. Two had suffered remote (greater than one year prior to evaluation) pulmonary emboli. Pulmonary artery pressure was found to be normal in the supine position in all patients. The orthostatic increase in right-to-left shunt was demonstrated by catheterization and by orthostatic venous contrast two-dimensional echocardiography, which detected the intracardiac shunt in all cases.

The underlying pathophysiology is not agreed upon. Pulmonary artery pressures in the upright position have not been well documented (see table), leaving open the question of whether pulmonary hypertension in the upright position is a consistent finding. Virtually all the patients described had pulmonary disease and frequently had undegone pneumonectomy. Although not specifically described, an anatomical rotation of the heart which could direct the right atrial inflow towards the septal defect in the upright position, resulting in intermittent shunt flow, might be expected. Further studies need to be performed to confirm this postulated mechanism. Increased hydrostatic pressure from postpneumonectomy hydrothorax may be postulated to play a role in the orthodeoxia; technical difficulties have made the confirmation of this hypothesis difficult.

Pulmonary Vascular Shunts

Three patients with true intrapulmonary right-to-left shunting are described by Robin and Laman.[3] The shunts were found to be direct arteriovenous shunts in the basal segments of the lung. Arterial hypoxemia that increased on sitting was documented. There was no evidence for parenchymal disease that might cause shunting on the basis of anatomic "dead space"; in this situation, desaturation would predictably be worsened in the supine position. The proposed mechanism for these patients' orthodeoxia was increased blood flow in the upright position to the area containing the shunting vessels, causing greater shunt flow. Two patients with non-

Hemodynamic Data in Studied Patients with Documented Intracardiac Shunts

Author	Site of Shunt	Pulmonary Disease	Position	PA* Mean	RA† Mean	Reference
Begin	Atrial septal defect	Pneumonectomy	Supine	nr	15	6
LaBresh	Atrial septal defect	Pneumonectomy	Supine	8	0	8
Schnabel	Patent foramen ovale	Pneumonectomy	Supine	nr	nr	4
Seward	Patent foramen ovale	Pneumonectomy	Supine	16	6	9
	Patent foramen ovale	Pneumonectomy	Supine	16	1	
	Patent foramen ovale	Pulmonary embolism	Supine	nr	4	
	Atrial septal defect	Pulmonary embolism	Supine	14	8	
	Patent foramen ovale	Pneumonectomy	Supine	20	2	
	Patent foramen ovale	Pneumonectomy	Supine	13	6	
	Patent foramen ovale	Unknown	Supine	14	5	
Winters	Atrial septal defect	Pneumonectomy	Supine	Normal	Normal	5
Wranne	Patent foramen ovale	Pneumonectomy	Supine	12	−1	7
Wright	Patent foramen ovale	Unknown	Supine	11	−8	

*PA = Pulmonary Artery †RA = Right Atrium

basal intrapulmonary shunts were mentioned; no platypnea or orthodeoxia was noted in those patients, adding credence to this theory.

Undocumented Shunts

Four reports have described patients with the syndrome of platypnea and no obvious anatomical site for right-to-left shunting. The first was the platypnea patient described in 1969 by Altman and Robin.[2] This 59-year-old man had progressive platypnea and orthostatic desaturation. Postmortem examination revealed severe bullous emphysema without evidence of cardiac disease or septal defects.

The second case was reported by Khan and Parekh in 1979.[10] This patient had a long course with severe pneumonia requiring mechanical ventilation and positive end-expiratory pressure. The hospital course was complicated by bilateral pneumothoraces and a tension pneumothorax. After recovery, when both mechanical ventilation and trachael intubation had been successfully discontinued, the patient reported platypnea and had documented orthodeoxia which spontaneously resolved, coincidental with roentgenographic clearing of the pulmonary infiltrates and pneumatoceles. No satisfactory explanation was found for the patient's symptoms.

In these two patients one might expect pulmonary hypertension, which could increase right-to-left flow through any pulmonary shunts that might be present; however, no site for any shunting was found. There has been as yet no satisfactory explanation for why marked volume loss in the lungs, as seen in these two patients, would cause platypnea. One might expect an increased pulmonary vascular resistance, but the difference between these two patients and the myriad others with severe lung disease who have no platypnea is unclear.

In the third report, Krowka and Cortese[11] discuss a series of 11 patients with chronic liver disease and severe hypoxemia. Review of blood gases showed an orthostatic desaturation; the postulated mechanism was a defect in normal reflexive pulmonary vasoconstriction on rising, leading to increased blood flow through dilated basal vessels.

In the fourth report, Tenholder[12] recently described two patients with platypnea and orthodeoxia in the setting of interstitial fibrosis without demonstrable anatomic shunt or pulmonary hypertension. The postulated explanation was V/Q mismatch in the absence of hypoxic pulmonary vasoconstriction; an alternate explanation was obligate gravitational perfusion to abnormal basal ventilatory units. The importance of the observation of platypnea in the diagnosis and management of these patients was stressed.

Our index patient is unique in several aspects. The initial clinical setting is similar to those previously reported in that the typical presentation prompted appropriate work-up which led to the discovery of an atrial septal defect. On repair, the symptoms resolved and the patient remained asymptomatic for three years until he presented again with platypnea. There are, to our knowledge, no previous reports of recurrent platypnea. He clearly had the syndrome of platypnea with documented orthodeoxia on presentation to the hospital in April 1986.

The immediate concern at presentation was failure of the atrial septal defect repair, especially with the acute onset of symptoms. After appropriate

treatment of the patient's severe biventricular failure, the symptoms improved, and he did not demonstrate postural desaturation at the time of repeat cardiac catheterization. In addition, no shunt was found either by catheterization or contrast echocardiography with orthostatic examination. The impression, therefore, was that the platypnea was secondary to severe congestive heart failure, although the mechanism remained unclear.

Wranne and Tolagen[7] discussed a decrease in cardiac output in the upright position, causing decreased venous oxygen saturation with accentuation of a right-to-left shunt (especially in the setting of decreased effective intravascular volume). Small transient shunts may have been present which were clinically insignificant until a precipitating event caused an increase in shunt desaturation. It would have been informative if orthostatic catheterization had been performed; however, this test was considered technically impossible at the time of the patient's evaluation.

Of clinical interest was the unusual finding of a patient with severe ventricular dysfunction who nonetheless was more comfortable supine than sitting, an indication that another process in addition to simple heart failure was present. It must be pointed out that severe congestive heart failure is common; platypnea in this subgroup of patients is previously unreported.

Two additional patients were identified with the clinical syndrome of platypnea with documented orthodeoxia during the period from October 1986 to July 1987 at the Oklahoma City Veteran's Administration Medical Center. Both had marked pulmonary volume loss due to extensive bronchogenic carcinoma. No other clinical conditions associated with platypnea were noted in the presenting history. Due to their acute illnesses which necessitated admission, no detailed evaluation was done on either patient during their hospital stays; both patients have since expired. Platypnea may be more common than the literature would suggest, but is uncommonly appreciated.

Summary

Platypnea is a clinical syndrome of dyspnea worsened by assuming an erect position and is associated with a postural arterial oxygen desaturation known as orthodeoxia. The clinical incidence of this syndrome may be underestimated by its occurrence in the medical literature. Several subgroups have been identified: patients with basal pulmonary vascular shunts; patients with intracardiac shunts, generally atrial, and who often have loss of lung volume; and patients without detectable shunts. Severe congestive heart failure may accentuate an occult shunt. When a patient presents with platypnea and/or orthodeoxia, a careful search should be made for underlying correctable disease such as atrial septal defects. Evaluation should include orthostatic contrast echocardiography, which in skilled hands may obviate the need for invasive cardiac catheterization in diagnosing underlying cardiac defects. Hemodynamic changes with changes in position have been difficult to study, but may play a significant role in the pathogenesis of this syndrome and, ideally, should be documented to clarify the underlying pathophysiology.

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Occupational Medicine in Oklahoma: Hydrofluoric Acid Dangers

Joe E. Himes, MD

Occupational Medicine is the study of the interaction of workers with their workplace and the workplace's effect on the workers' health. In addition, many workplaces have the potential to affect the community as a whole. Herein is reported a brief case of communitywide exposure to the powerful oxidant, hydrofluoric acid. A discussion of sources and uses of hydrofluoric acid along with emergent care of burn victims is also presented.

Even as this paper was being prepared, a second toxic cloud (sulfuric acid) was released in the Tulsa area. Clearly physicians should be aware of potential environmental impacts of occupational hazards.

At 10:55 AM on March 19, 1988, a cloud of toxic gases was released from an oil refinery on the west edge of Tulsa. The cloud, thick and heavy, clung close to the ground as it moved into and across the city. Those persons outdoors were directly exposed; additionally, many indoors were also exposed as ventilation systems transported air inside. Dispatchers from the Emergency Operations Center, the agency charged with coordinating response to such incidents, were overcome by the fumes, handicapping that agency's ability to respond. In all, thirty-six people were treated at area hospitals for acute chemical exposure. Fortunately, there were no fatalities.

While refineries utilize many dangerous chemicals, arguably the most dangerous is hydrofluoric acid (HF), the major constituent in this toxic cloud. Based on computer simulations, it is believed that the concentration of HF could have reached 20 ppm, a level dangerous to health and life. Aided by media coverage following the accident, the public became more aware of occupational hazards and their potential impact on the community. They learned that other major users of HF in the state of Oklahoma included in the Conoco refinery in Ponca City, the Kerr-McGee refinery in Wynnewood, the Total Petroleum refinery in Ardmore, and the Farmland Industries refinery in nearby Coffeyville, Kansas.[1]

Fluorine gas, a highly reactive compound, readily reacts with water to form HF, the most reactive nonmetal and most powerful oxidizer known. Hydrofluoric acid, a colorless liquid, corrodes all common metals and etches glass. It is also more soluble than other halogens.

HF is one of the more common elements in nature and has been known since the thirteenth century. Major commercial sources include fluospar (CaF2) and phosphate rock fluoropatite (Ca10F2[PO4]6). While fluoropatite is used in fertilizer, fluospar is heated with sulfuric acid to produce hydrofluoric acid.

There are many opportunities for occupational exposure as industry utilizes HF in rocket propellants, mineral processing, glass making, electronic components manufacturing, and oil refining. Hydrogen fluoride is also used to remove sand from metal castings. Once produced, this highly dangerous

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compound is routinely shipped cross-country via railroad cars.[2]

Human contact with HF results in chemical burns that often are severe. While specific treatment is dictated by the area and the extent of exposure, all exposures require immediate removal of the patient from the harmful environment and immediate thorough washings with large quantities of water. Contaminated clothing should be removed while showering is in progress.[3] Unlike most other acids, HF is not neutralized rapidly; tissue destruction may continue for a period of several days.

Hydrofluoric acid burns cause extreme pain secondary to irritation of nerve endings by changing calcium and potassium levels.

Hydrofluoric acid burns cause extreme pain secondary to irritation of nerve endings by changing calcium and potassium levels. Use of calcium gluconate gel provides pain relief. In fact, one can use pain relief provided by this gel as an indication of successful treatment. After showering, 2.5% calcium gluconate gel can be massaged into the skin.[4] This treatment should be continued three to four times daily for three to four days. During this time, local anesthetics should be avoided as they mask this therapeutic gauge of pain relief. An alternative to applying calcium gluconate is covering the area with a bulky, soft dressing and soaking the dressing with iced zephiran or hyamine chloride. In all cases, meticulous follow-up is advised.

After irrigation, careful estimation of burn area and depth should be made. Persons with burns less than 50 cm^2 may be treated on an outpatient basis if no vital areas are involved. Persons with burns 50 to 100 cm^2 should be hospitalized, while those with burns >100 cm^2 should have access to intensive care units. Additionally, all patients with extensive skin burns should be considered to have inhalation injury, especially if the head and neck are exposed. Since exposure to solutions $<20\%$ HF may not produce clinical signs for 8 hours, patients should be evaluated more than once.

Those with more extensive exposures should receive a complete blood count, blood urea nitrogen, serum creatinine, liver function tests, electrolytes, serum calcium, serum magnesium, fluoride levels, and arterial blood gases. One liter of intravenous fluids containing 20 ml of 10% calcium gluconate should be infused, followed by additional calcium as levels dictate. Because prolonged QT intervals on electrocardiogram (ECG) may be a more reliable indicator of calcium status than clinical tetany during rapidly evolving hypocalcemia, continuous cardiac monitoring should be utilized. One particular case report identified a 2.5% total body surface area (TBSA) injury with inhalation that resulted in death.[5] This patient's calcium level did not rise above 3.1 mg/ml in the final hours of life, despite vigorous attempts at calcium replacement.

Deep skin burns involving $>20\%$ TBSA may be treated by infiltrating the area surrounding the burn with 5% calcium gluconate solution. The skin is infiltrated 0.5 cm away from the border of the affected tissue. One quick estimation as to amount is that approximately 0.5 ml of calcium gluconate/cm^2 of burned area should be used. Digits should *not* be injected as the calcium can cause necrosis of digits.

The routine use of corticosteriods is recommended; however, because HF digests tissue, routine use of empirical antibotics and enzyme preparations appears unnecessary for surface injuries.

As mentioned, inhalation injury is common with exposure to HF. The patient should receive 100% O_2 immediately, followed by 2.5 to 3% calcium gluconate solution via nebulizer. Then the patient should be observed carefully for respiratory compromise and receive intubation as necessary. One should be aware that even with severe burns to the face and neck, pulmonary edema, which is likely, may be of either rapid or delayed onset. The development of pulmonary edema requires intubation, use of positive end-expiratory pressure (PEEP), and prophylactic antibotics. Since pulmonary reaction to HF can last up to 3 weeks, recovery is slow and often requires prolonged observation.

All eye exposures are potentially dangerous. The vapor alone can cause extensive damage. Whether exposure occurs from liquid or vapors, the victim should be treated with copious washings, followed by ice packs, before leaving the worksite. At the medical facility, the patient's eyes should be rinsed for 10 minutes with 1% calcium gluconate in normal saline. Irrigation is followed by instillation of the same solution every 2 to 4 hours over the next 48 to 72

hours. An ophthalmologist should always be consulted.

Another type of exposure is ingestion, which leads to severe burns of the upper gastrointestinal tract. The patient should be instructed to drink large amounts of water and milk or magnesium hydroxide. Do not induce vomiting as this will further irritate the oropharynx. All patients who ingest HF should be hospitalized.

While acute injuries are dramatic and potentially catastrophic, chronic exposure is also dangerous, leading to tooth mottling in children and bone fluorosis in adults. Occupational Safety and Health Administration (OSHA) standards are set at a time-weighted concentration of 2.5 mg/mm^3 (3 ppm). This may be monitored via urine fluoride levels. Levels above 7 μg/liter at the end of the workshift may indicate excessive exposure. Since the use of HF is critical in many instances, it is important to utilize it in a responsible manner. Employees should be adequately trained and supervised. Proper ventilation should be designed and used. Protective equipment using plastic (not glass) faceshields and butyl rubber or neoprene (not natural rubber) should be provided. Showers and eyewashes should be installed and kept in working order. It has been suggested that prospective employees who are to work in exposed areas receive a pre-employment pelvic x-ray, chest x-ray, and pulmonary function tests. Additional pelvic x-rays are warranted when the average pre-shift urinary concentrations are greater than 4.0 mg/liter during testing over six years.[6] Finally, plans should be made to handle larger scale emergencies which might be a threat to the surrounding community as well as the workplace.

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Coming next month

The December issue will feature another in the JOURNAL's series of "Leaders in Medicine" biographies honoring outstanding Oklahoma physicians. Also planned are an article on septic arthritis in the geriatric population and a summary of a report done by the Oklahoma Medical Research Foundation on obstetrics in Oklahoma's rural areas.

Why Have Deaths from Respiratory Distress Syndrome/Hyaline Membrane Disease Declined? Another View

Samuel Sepkowitz, MD

There is more to the success story than treatment of the newborn.

A report from the United States Public Health Service by Malloy, Hartford, and Kleinman has documented an impressive decline in deaths from respiratory distress syndrome/hyaline membrane disease (RSD/HMD) in the United States, 1969-1983.[1] However, the only explanation considered by the authors in this epidemiological study was a therapeutic one — greater use of neonatal intensive care units (NICU) and mechanical ventilation. Neither prevention of RDS/HMD nor a reduction in the severity of the disease was considered. It is as if, for 15 years, nothing has reduced a newborn's chance of dying from RDS/HMD but improving the chance of getting into an NICU.

What about family planning? According to the same vital statistics, in 1969 there were 41,811,846 women of childbearing age who delivered 3,600,202 live newborns. In 1983 there were 55,290,519 women delivering approximately the same number of newborns. A fertility rate decline of 24%, to the unprecedented level of 65.4 per 1,000 women of childbearing age, has created an equally unprecedented reservoir of selection bias that simply cannot be ignored. Surely family planning, a priori, the principal explanation for the fertility decline, has meant more than the avoidance of pregnancy or childbirth. Family planning has the potential to improve the health of newborns, and of utmost importance, to prevent the birth of high-risk, RDS/HMD-prone newborns. In the context of family planning and the avoidance of high-risk newborns, it should be pointed out that the contraceptive of choice for 33% of men and women has been surgical sterilization.[2]

Along with the declining fertility rate, vital statistics have recorded a 19% increase in the number of women who sought prenatal care during the first two months of pregnancy; from 41.5% of pregnancies in 1969 to 51% in 1983. The trend toward earlier prenatal care has permitted earlier diagnosis of pregnancy and an opportunity for earlier identification and management of obstetrical problems. Earlier prenatal care has also provided the family with an option to consider for a diagnosed high-risk situation — to continue or discontinue the pregnancy. In either event, RDS/HMD might be prevented.

Improvement in obstetrical care may have contributed a great deal to the decline in mortality by reducing the incidence and severity of RDS/HMD. A greater awareness of the importance of prolonging gestation, with better understanding of the pathogenesis of the disorder, better techniques for estimating gestational age (amniocentesis and ultrasound) leading to better timing of obstetrical interventions, would all tend to improve obstetrical care. Reports of iatrogenic prematurity and RDS/HMD brought on by the too-early elective induction of labor and delivery have reflected this greater awareness among physicians.[3-6] The incidence of iatrogenic disease has not been determined, but what was found was con-

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sidered by some to be only the tip of the proverbial iceberg.[6] At a community hospital level, prolongation of gestation may have resulted from no more than a form of obstetrical restraint. Among vaginal deliveries, the incidence of amniotomies, a procedure to augment or induce labor, declined from 51.3% in 1973-1977 to 41.4% in 1978-1982 ($P<.001$).[7] This was associated with a decline of 19.2% in the very-low-birth-weight rate (less than 1500 gm); births less than 1250 gm declined 46.5% ($P<.02$).[8]

Furthermore, several perinatal programs in this country have successfully lowered the incidence of low birth weight and prematurity among targeted populations, an indication of what can be done to eliminate deaths from RDS/HMD and what may have been occurring without formal programs in this country for years.[9-11]

As stated by Showstack et al, "Vital statistics can point us in the right direction concerning factors that affect perinatal outcome."[9] The report by Malloy et al has pointed us in the wrong direction. RDS/HMD has been prevented in the past and must be prevented in the future. In addition, consider a randomized controlled study of mechanically ventilated infants, 1000 gm to 1500 gm with RDS/HMD: with or without surfactant therapy, approximately 50% of each group developed intracranial hemorrhage and approximately 25% of each group developed hydrocephalus.[12]

It is well and good for Malloy et al to add their statement calling for "further reductions" in the low-birth-weight rate, a nationwide reduction that can no longer be denied. Reduction in the low-birth-weight rate is indeed the most important contribution to reducing mortality. But what must be emphasized and understood is that there is no alternative.

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HIV Disease: A Perspective from Rural Medicine

J. M. Pontious, MD

Even in the best health care systems, the medical and social impact of the various disease forms associated with human immunodeficiency virus (HIV) is a matter for public debate. When one approaches this from the perspective of rural health care, the problems are often intensified and seemingly insurmountable. This paper is written as a forum to stimulate discussion and the rural physician's personal thinking about HIV infections.

The spectrum of HIV disease has untold impact on all health care providers. It may be time to look at this impact more critically. Whether the physician practices primary care in rural Oklahoma, or subspecialty medicine in the urban setting, with time the impact will be present for all of medicine.

Data regarding the influence of HIV disease in rural settings are absent from the literature. This leads one to an incorrect assumption that HIV disease has somehow bypassed rural Oklahoma. This type of assumption is naive and will delay the educational approach that is necessary in all communities.

Several barriers must be overcome when one speaks of HIV disease's impact on rural Oklahoma. What is the numerical impact of HIV? What are the economic problems and social pressures encountered? How does this differ from the effects on urban providers? How does one deal with a disease process that has largely been defined since most physicians in this state were trained?

Incidence/Numerical Impact

HIV disease is a problem for health care, no matter where one practices or what type of practice. Physicians must get away from the idea that this is someone else's problem . . . someplace else.

- 1.5 to 2 million people are infected with this virus in the US
- 5 to 10 million people are infected worldwide in 137 countries
- Oklahoma AIDS incidence outside of metropolitan areas ("Elsewhere, Oklahoma") is 4.2/100,000
- "Elsewhere, Oklahoma" incidence of HIV infection is 136/100,000

The Centers for Disease Control (CDC) have attempted to gain information about the true incidence of HIV disease in non-urban or "low risk" communities. Several mechanisms for collecting this type of data have had inherent selection biases. To this point, several authors have attempted to create mathematical models for the incidence predictions.

Using current HIV incidence information for "Elsewhere, Oklahoma," a county of 10,000 statistically would show 14 people with HIV. Calonge[1] reports a survey of 68 primary care practices throughout the US and Canada that collectively care for 300,000 patients. Sixty-two percent of these practices are rural, yet the incidence of AIDS in these practices was higher than what would be calculated using the work of Hardy.[2] Further work with this private practice ambulatory research group will allow the Centers for Disease Control to more accurately calculate the incidence in non-urban US populations.

Note this group has no practices in "high risk" areas.

HIV disease is present throughout this state. The practitioner will no longer be able to take comfort in the rural setting. Isolation from HIV-infected patients is not an option and to assume that the rural medical setting will offer this isolation will only delay needed educational preparation.

Economic Impact

There is currently a severe economic catastrophe brewing in rural medical care. The problems of uncompensated care, difficult access, limited support services, unsophisticated social services, and sparse consultation services are all compounded in rural settings. With the advent of a disease process that has fairly high lifetime care costs, there can be nothing but mixed emotions about the economic toll that HIV disease will lay at the feet of rural health care systems.

To this point, care of the HIV-infected patient has often been shunted to the urban medical center. In the next decade, HIV disease will become a disease of primary care; for us, as a profession, this must be an informed transition.

In 1984, Hardy[3] estimated the lifetime inpatient medical costs of persons with acquired immune deficiency syndrome (AIDS) at $147,000. By 1988, these same lifetime costs had been reduced to $40,000 to $60,000, mainly through less inpatient utilization. The economic impact to this nation is estimated to be $8 to $16 billion by 1990.

What will be the economic impact in rural settings? Data which would allow for accurate computation are unavailable. Using the data generated for the theoretical county of 10,000, those 14 patients who have HIV infection, when multiplied by $50,000 (average lifetime medical costs), incur expenses totaling $700,000.

How long HIV carrier progression to AIDS will take is still debated. The process most frequently takes about five to seven years. Needless to say, this accounts for costs that the rural medical community would be hard pressed to meet.

The AIDS epidemic has already exacerbated existing problems regarding access to health care. The economic issues of unemployment and uninsured patients must be addressed and not simply left to "take care of themselves."

It is important, then, that the physician be involved in the process of looking for cost-effective treatment alternatives. It is time to rethink some of the approaches that have been taken in ambulatory medicine. Adler[4] has suggested that health care providers look at the social and economic costs of different types of care in order to help each physician realize the most efficacious, acceptable, and least expensive form of care.

The emphasis should be on out-of-the-hospital care that maintains the patient with AIDS/HIV as a productive person within the community for as long as possible and then provides a supportive environment with an emphasis on comfort and human dignity when productivity is no longer possible.[5]

Special Issues That Affect the Rural Practitioner

Confidentiality. The major problem faced by the rural health care provider will be in the area of confidentiality. Social prejudice against the HIV-infected person is a public problem that threatens the very fabric of society and should evoke concerned responses from all sectors of society.[5] Because of the social stigma associated with this disease, confidentiality is imperative in the rural setting.

Helbert[6] discusses a recent British study in which AIDS patients showed a preference for visiting hospital clinics rather than their general practitioner; the reason given was their concern about confidentiality. This must be a concern for the rural practitioner.

The confidentiality of patients infected with HIV should be protected to the greatest extent possible, consistent with the duty to protect others and to protect public health. Often this can require a fairly ingenious approach to medical charting. As there are many approaches to maintaining the confidentiality of HIV information in the medical record, a review here is not within the scope of this paper.[7]

One major area that needs special attention is the consent for release of information. Never assume that written consent is informed consent unless the physician has personally obtained the consent. Consider calling the patient to clarify consent, if medical records might be used for discriminatory reasons.

It also may be time to sit down with office personnel to discuss the importance of confidentiality. This should be an ongoing process in the medical office, not limited to a vague question which is asked in the hiring interview and then not touched upon again. Each practice should consider a written policy on patient confidentiality and consent, and the consequences of breach of confidentiality. This must be

frequently reviewed with personnel, and the physician must teach this by precept.

Education Efforts. As a respected member of the community, the rural primary care physician is afforded an influential position. The use of this position is necessary to adequately educate and plan for the upcoming epidemic. Currently, physicians only have one tool with which to slow the rate of spread of HIV disease; that tool is education with accurate information.

On what groups should the rural physician focus his educational efforts?

1. High exposure groups — homosexual, bisexual, multiple sexual partners, IV drug user, and/or sexual partner of high exposure group
2. Community leaders, employers, community service organizations, welfare agencies, school officials
3. Health care providers, physicians, nurses, housekeeping staff, nursing home health care workers, EMTs, laboratory techs, office staff
4. Himself.

High quality, nonjudgmental care without regard to personal risk is to be the standard which all physicians strive to reach. One must be prepared to utilize a procedure for taking a complete sexual history and be able to discuss risk factors with patients.

Only by educating health care personnel in the concept of "Universal Precautions" will the physician minimize the chance for accidental exposure while preserving the vital physician-patient relationship that has often been lacking in the treatment of the patient with AIDS/HIV.[1,9]

The rural primary care physician should teach by precept, demonstrating by actions the importance placed on educating the health care worker, who looks to the physician for guidance on AIDS and HIV disease. If, by example, the physician can take this in stride, the health care worker is much more likely to accept and practice universal precautions.[8,9]

It is not within the scope of this discussion to expound on universal precautions, but it may indeed be important to review normal functioning as a medical clinic, and re-evaluate for risk reduction. Several areas immediately come to mind:

1. Phlebotomy
2. Decontamination of surgical instruments, scopes, cautery
3. Spills of blood or body fluids
4. Mailing of specimens
5. Discarding of medical material (needles, etc)
6. Discarding of blood products, sera, etc.

Protocols for all of these areas should be initiated, and the clinic staff should be educated about these protocols.

Legal and Ethical Considerations. A basic question must be answered: Does our society have a moral obligation to provide some level of health care to every one of its members?[10]

As members of the medical profession, we have an obligation to provide competent and humane care to all patients, including those with HIV disease. The denial of appropriate care to patients for any reason is unethical.[5] Northfelt[11] has stated that it is also equally unacceptable to plead ignorance of the disease as an excuse to avoid caring for patients with HIV disease.

Conclusion

The rural physician finds himself in a major dilemma. On one hand, rural medicine has been traditionally "low tech" and, in some minds, ideally suited for the supportive care of the terminal patient. Yet, on the other hand, the physician is faced with hospitals scraping to survive economically, lack of organized support systems and personnel capable of networking support systems, and little or no educational support or expert opinion. This is compounded by the extreme prejudice about HIV disease that is present in many rural communities.

It is no wonder that rural health care is not considered to be a major partner in the effort to educate about HIV disease. This must change in the future.

- HIV disease will affect all of us.
- A major research effort is needed to explore all aspects of clinical care of patients with HIV disease. Long-term efforts to understand and favorably influence the sociological, psychiatric, and economic consequences of HIV disease are needed.[5]
- Rural practitioners must utilize skills to network limited resources.
- It is imperative that rural practitioners educate their communities about HIV disease, using innovative techniques and approaches. The concept of community service has always been held in high esteem by the medical profession.
- Community acceptance and support will occur only if primed by an extensive educational program pointed towards those expected to do the work.[4]

• The best approach to limiting HIV disease continues to be educating the public about modes of transmission and measures to prevent infection.

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Very important program

OSMA centers fall promotion effort on Very Important Patients

The Very Important Patient (VIP) Program, designed to help Oklahoma's eligible low-income Medicare patients locate physicians who accept Medicare assignment, is the subject of a revitalized promotional campaign this fall.

Originated by the Tulsa County Medical Society, the program was endorsed for statewide implementation by the Oklahoma State Medical Association (OSMA) in 1987. Early efforts gained commitments and participation from most of the state's larger county medical societies; the current campaign is intended to complete the task of making VIP a truly statewide program.

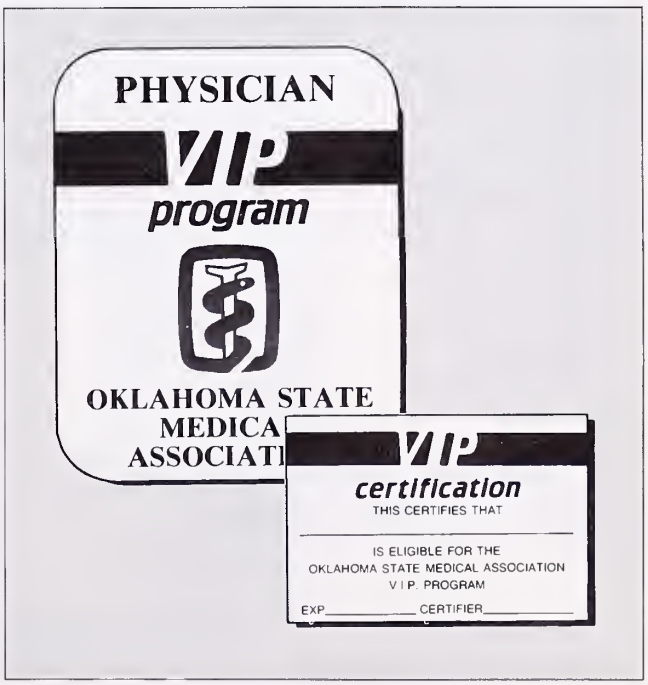
The September 1989 issue of *OSMA News* contained a postage-paid postcard asking physicians if they are or are willing to become a VIP physician. The postcard also allowed physicians to order VIP cards to issue directly to those Medicare patients for whom they already accept assignment.

Other Medicare patients wishing to participate in the program can apply for certification at their local senior centers. Once certified, they are issued a VIP card which, when presented at the office of a VIP doctor, entitles them to acceptance on an assignment basis.

VIP eligibility requirements include having social security as the sole source of income; already being on Medicaid; or having a total retirement income of less than $2,000 above the federal poverty level. Income levels are slightly higher in Oklahoma City and Tulsa.

Physicians who have not already done so are asked to complete their VIP survey cards and return them to the OSMA as soon as possible. This will assist the OSMA in updating its VIP files and in seeing that the VIP program is made available to Medicare patients in every county in the state.

Questions about the VIP program should be directed to Mike Sulzycki at OSMA headquarters, (405) 843-9571 or 1-800-522-9452.



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Into the Nineties

Bethany physician becomes president of family practice academy

Kenneth W. Whittington, MD, Bethany, became president of the American Academy of Family Physicians (AAFP) in Los Angeles on September 19. He succeeds James G. Jones, MD, of Greenville, NC.

The AAFP is the national association of family doctors, representing more than 66,000 family physicians and medical students. The inauguration ceremonies were part of the Academy's Forty-first Annual Convention and Scientific Assembly.

A Fellow of the AAFP, Dr Whittington is in private family practice. He has served as chief of staff of Bethany General Hospital and Deaconess Hospital, Oklahoma City.

Dr Whittington recently reflected that his decision to choose a career in medicine did not come early. In fact, the 55-year-old Amarillo, Tex, native said he didn't decide to become a family doctor until he had worked nearly seven years as a Phillips Petroleum Company geologist after graduating from Texas Tech, in Lubbock.

"I know it sounds corny," he said, "but I wanted to do more to help people, and I wanted to do it in a more direct way than I could working in the oil fields."

Dr Whittington admitted that returning to school — he received his medical degree in 1968 from the University of Oklahoma — and starting a career in the demanding field of medicine was no easy task.

"You don't see a lot of 30-year-olds, especially married with small children, going to pre-med school classes," he said. Although his career move met with some skepticism from friends and school officials, Dr Whittington credits his wife, Alice, with providing crucial support for his effort. Another source of his desire to enter medicine came from a close friend who was a plastic surgeon. This friend proved to be a mentor of sorts to Dr Whittington, who would like to encourage more family physicians to take up the mentor role for young students who are considering careers in family practice.

"It's the most wonderful job I could imagine. Family medicine is the one medical specialty where you must treat the whole person, the whole family," he said. "You can't take the impersonal approach or the narrow view here, because the family physician is diagnostician, counselor, therapist, advocate, and healer to the whole person, not to just a particular organ like some other specialties."

Dr Whittington said he plans to concentrate on encouraging more medical students to consider family practice when they are choosing a specialty. He added that numerous surveys have pointed out that the nation is experiencing a growing shortage of family physicians. However, he said, many medical schools continue steering students into other "already-overloaded specialties."

"We have to communicate better with prospective medical doctors while they are still in school, and one way to do that is for all current family doctors to adopt, so to speak, a medical student in order to show him or her the rewards of family practice."

Dr Whittington said the personal approach is important, whether the doctor is practicing in urban or rural areas. His hometown, Bethany, a suburb of Oklahoma City, has not suffered from the problems associated with another of his causes — increasing health care access in rural areas.

"The family doctor has traditionally been the prime health care provider in rural America, but now doctors are finding it difficult to maintain a practice in small areas, and hospitals are closing," he said. "A major cause of the flight of health care services from rural areas is government policies that short-change rural doctors and hospitals on Medicare reimbursements." Passage by the US Congress of a bill that would pay doctors based on the relative value of their services, rather than their location and their specialty, is a major priority of Dr Whittington during the next year.

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One of five nationwide

Oklahoma blood center to study human retroviruses in donors

The Sylvan N. Goldman Center, Oklahoma Blood Institute (OBI) is one of five blood centers selected by the National Heart, Lung and Blood Institute (NHLBI) to conduct studies of human retroviruses among blood donors.

Objectives of the six-year study are to determine the prevalence of HIV-1, HIV-2, HTLV-I, and HTLV-II in blood donors, evaluate risk factors, and assess the impact of mandatory screening for these viruses on blood center operations and on the blood supply in general.

The $1 million contract awarded for the study will be used in three phases, according to Ronald O. Gilcher, MD, OBI director and principal investigator for the project. Phase I, the first 12 months, will be spent in planning, developing protocols, and training staff. Phase II will extend over four years and will include identification and follow-up of blood donors who test positive for the retroviruses. Phase III will be spent in data analysis and reporting.

Oklahoma State Department of Health personnel will collaborate with Gilcher on the epidemiologic aspects of the study.

The NHLBI anticipates that more than 500,000 donations will be screened during this study. Because additional retroviruses may be identified in the future, a central blood specimen repository for long-term storage of samples from these donors will be maintained for further testing.

The five centers chosen for the study represent areas of the country that are at high, medium, and low risk for human immunodeficiency virus (HIV). In addition to OBI, centers involved in the study are the University of California–San Francisco; American Red Cross Blood Services, Chesapeake Region; American Red Cross Blood Services, Los Angeles/Orange Counties Region; and American Red Cross Blood Services, Southeastern Michigan Region.

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Powerful financial incentive

Study: Physician-owned insurance companies help stop malpractice

Physician-owned companies that insure physicians against malpractice suits are more effective than state licensing boards in identifying and disciplining negligent physicians and in deterring substandard medical practice, says a study in the September 8 *Journal of the American Medical Association (JAMA)*.

An accompanying study of doctors who lose their liability insurance shows that high-risk physicians can be reinsured, but by companies that charge higher premiums, with larger deductibles and restrictions on practice aimed at reducing the number of malpractice suits.

Approximately 40% of all practicing physicians are insured by companies owned and operated by physicians, report the authors of both studies, William B. Schwartz, MD, of Tufts University School of Medicine, Boston, and the RAND Corporation, Santa Monica, Calif, and Daniel N. Mendelson of Tufts University School of Medicine. "Physician-owned companies are unique in that the physicians they insure have a powerful financial incentive to help detect and discipline negligence-prone colleagues," they write. These insurance plans minimize risk by carefully screening applicants for history of prior claims and evidence of negligent behavior.

Physician-owned insurance plans use extensive peer review and employ elaborate appeal mechanisms for physicians who do not meet acceptable standards of practice, the authors say. Negligent physicians may lose their coverage or face other penalties, such as surcharges or restrictions on their medical practice, in less serious cases.

The authors compare the performance of state licensing boards to that of physician-owned insurance companies in penalizing negligent physicians throughout 1985. They estimate that state boards

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Physician insurance (continued)

suspend or revoke the licenses of no more than 0.08% of US physicians. By contrast, the percentage (0.66%) of practitioners insured by physician-owned companies who lost their coverage due to negligence was approximately eight times greater.

In the accompanying study of physicians who lost their liability insurance, Schwartz and Mendelson say that virtually all can be reinsured by "surplus-lines" companies, which insure applicants at higher-than-standard rates. The demographic study of 920 physicians who applied for reinsurance at surplus-lines companies found that physicians between the ages of 45 and 54 were overrepresented compared to the general US physician population, the authors report. While they also found that several medical specialties were overrepresented among surplus-lines applicants, the percentages of foreign medical graduates and board certified physicians were virtually the same as in the US physician population.

The authors estimate that more than 2,000 US physicians lose their insurance each year due to negligence. These physicians may choose to discontinue patient care activities, to practice without insurance, or to continue to practice under coverage from a joint underwriting association which, by law, must insure all applicants.

In an accompanying editorial, James S. Todd, MD, of the AMA, urges state licensing boards and the insurance industry to "take more interest in preventing the recurrently negligent or marginally competent physician from being able to get undeserved insurance." While the medical profession "is doing a relatively good job in their underwriting responsibilities," it has not been as successful in preventing negligence suits. In the absence of tort reform, Todd writes, physicians need to focus on "suit prevention through education, practice evaluations, self-assessment, and behavior modification" to reduce the frequency of negligence and of claims.

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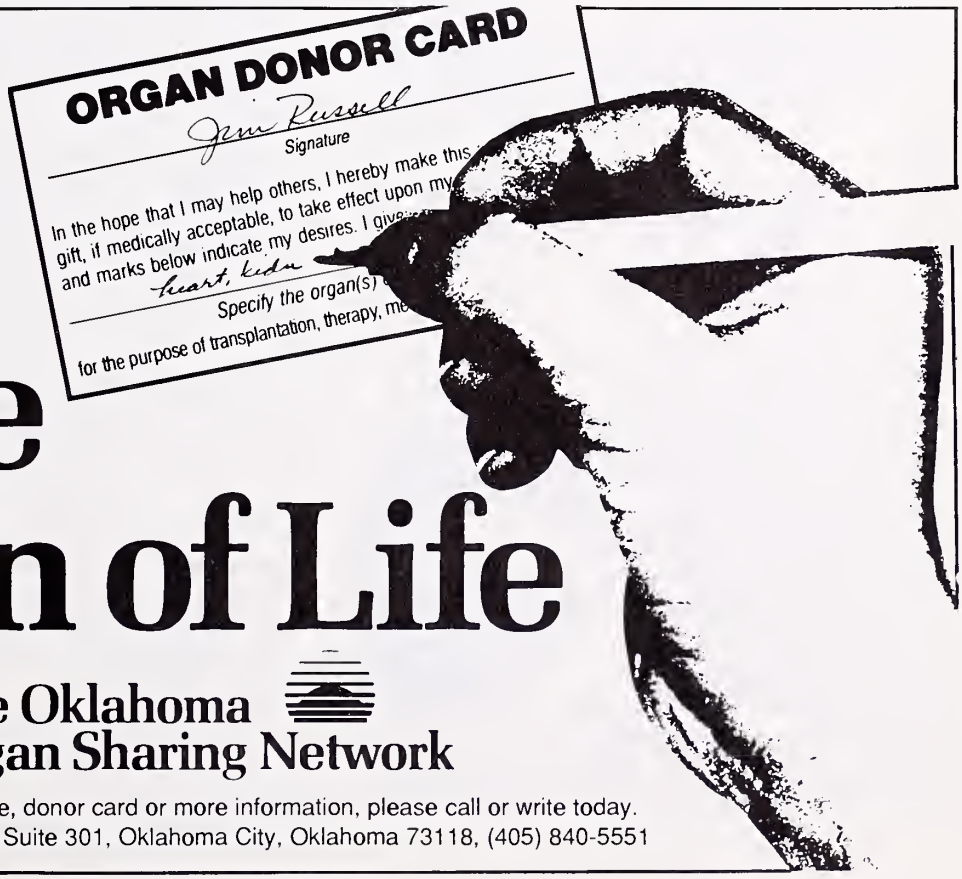

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Uniformity encouraged

Statement outlines AMA policy on licensing requirements for FMGs

In February 1989, the American Medical Association (AMA) formed a Department of Foreign Medical Graduates (FMGs) as part of its Office of Special Groups.

Director John E. Kasper, in a September 8 news release announcing the creation and duties of his new department, included the following statement of AMA policy regarding the licensing of FMGs:

"Simply stated, the AMA believes that individuals should be evaluated for graduate medical education (GME) entry, hire, and hospital medical staff privileges on the basis of individual qualifications. The AMA believes that the quality of education is an appropriate consideration in the recruitment and licensure of physicians. However, discrimination based solely on the country in which the medical education is completed is *inappropriate*. The AMA House of Delegates has passed policy calling on the AMA to protect the rights of duly licensed physicians in the United States. We oppose any legislative efforts to discriminate against duly licensed physicians.

"In relation to requests for initial licensure, the AMA has urged medical licensing authorities which grant an initial license to FMGs to maintain the documentation of graduation from a foreign medical school. The AMA feels that the documentation should subsequently be provided on request to other licensing boards for review in connection with an application for licensure by endorsement.

"The AMA has encouraged the Federation of State Medical Boards (FSMB) and individual medical licensing boards to continue to pursue the development of uniformity in the acceptance of examination scores on the Federation Licensure Examination (FLEX) and in other requirements for the endorsement of medical licenses. The AMA also has urged state licensing boards to pass laws and adopt regulations facilitating the movement of licensed physicians between licensing jurisdictions.

"Further, the AMA has recommended to the state licensing boards that they review the details of their application process for initial licensure to assure that their procedures are not unnecessarily cumbersome and that inappropriate information is not required within them. Of course, accurate identification of the applicant and the accompanying documents is critical.

"In regard to licensure by endorsement, the AMA recommends to state licensing boards that FMGs currently licensed in one jurisdiction should not be denied endorsement or admission to reexamination in another licensing jurisdiction *solely* because they are unable to document graduation from a medical school meeting Liaison Committee on Medical Education (LCME) equivalent standards and performance evaluation requirements."

IN MEMORIAM

1988

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Charles Nathaniel Atkins, MD	December 28
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1989

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Orville McClure Woodson, MD	May 11
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James Richard Riggall, MD	May 30
Howard Choice Martin, MD	July 23
D. Evelyn Miller, MD	July 30
Nevin Wilson Dodd, MD	July 31
Alwyn Travers Kornblee, MD	August 7
Edward Keats Norfleet, MD	August 13
Wayman Jackson Thompson, MD	September 20
George Harry Garrison, MD	October 5

DEATHS

George Harry Garrison, MD
1898 - 1989

OSMA Life Member and past president George H. Garrison, MD, died October 5, 1989, in Oklahoma City. A 1924 graduate of Washington University School of Medicine, St Louis, he established his pediatrics practice in Oklahoma City in 1929, retiring in 1982. Dr Garrison was active in numerous civic and professional organizations. He served as president of the Oklahoma County Medical Society in 1941 and of the Oklahoma State Medical Association in 1949-50. In 1977 the George H. Garrison Memorial Tower was named in honor of his long service to the University of Oklahoma Health Sciences Center. Dr Garrison was the subject of the JOURNAL's first Leaders in Medicine article, published in September 1981.

D. Evelyn Miller, MD
1898 - 1989

Evelyn Miller, MD, retired Muskogee general practitioner, died July 30, 1989, in Tulsa. A native of Missouri, Dr Miller was graduated from the University of Nebraska College of Medicine, Omaha, in 1928 and completed postgraduate studies in gynecology in 1932. She practiced medicine in Muskogee from 1940 to 1958, served as president of the East Central Oklahoma Medical Society for two years, and was active in many community organizations. She moved to Montgomery, Ala, in 1958, returning to Tulsa in 1963 after her retirement. She was awarded Life Membership in the OSMA in 1974.

Wayman Jackson Thompson, MD
1904 - 1989

Retired Oklahoma City gynecologist and surgeon Wayman J. Thompson, MD, died September 20, 1989. Dr Thompson was born in Nowata, Indian Territory, in 1904 and was graduated from the University of Oklahoma School of Medicine in 1929. He served for a number of years on the OU School of Medicine faculty and was a past president of the Oklahoma City chapter of the OU Alumni Association. Dr Thompson retired from practice in July 1966.

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Medicare Influenza Project and Influenza Surveillance Activities

The Centers for Disease Control (CDC) and the Health Care Financing Administration (HCFA) are sponsoring a special Medicare Influenza Demonstration Project in Oklahoma to study the feasibility of making influenza vaccine reimbursable by Medicare. The project is being conducted by the Immunization Division of the Oklahoma State Department of Health (OSDH).

State health officials hope most of the more than 400,000 Medicare Part B recipients in Oklahoma will take advantage of free flu vaccine offered this fall through private physicians, county health departments, home health care agencies, hospitals and nursing homes that have agreed to participate in the project. Project staff contacted more than 1,500 Oklahoma physicians in family and general practice, internal medicine, cardiology, pulmonology, and urology to offer enrollment in the vaccination program. Provider recruitment surpassed all expectations, with 86% of the physicians agreeing to participate.

In addition to the vaccine administration, the project will conduct influenza disease surveillance activities. This phase of the project will allow for documentation of the effects of free vaccine distribution on influenza illness and pneumonia. Oklahoma's ongoing Influenza-Like Illness Surveillance Program has been expanded to include a 10% random sampling of primary care physicians in the state. Two hundred two physicians in 51 counties will participate in the surveillance program, representing the disciplines of family medicine, general practice, internal medicine, and pediatric medicine.

Each physician has agreed to report weekly the number of influenza-like illnesses seen in his or her practice and to culture patients meeting the case definition of influenza-like illness: fever greater than 101°F and cough, with no other etiology. The Virology Laboratory of the Oklahoma State Department of Health will provide each surveillance participant with a viral specimen collection and transport kit.

In addition, the Virology Laboratory will perform influenza virus isolation and identification, including typing and subtyping, on specimens submitted by grant surveillance participants, and in certain cases, assay for the presence of antibody in paired sera. Of the 1,429 specimens received for testing during the 1988-89 surveillance season, 791 were found to contain influenza. The laboratory reported 60% of positive isolates within three days of receipt and over 90% by day 5.

For more information regarding the Medicare Influenza Demonstration Project, contact the OSDH Immunization Division, (405) 271-4073.

BOOK SHOP

Differential Diagnosis of Common Complaints. By Robert H. Seller. W.B. Saunders Company, Philadelphia, 1986.

Traditional medical textbooks are organized around diseases or organ systems. Patients don't usually come to physicians complaining of specific diseases, or problems with specific organ systems. They usually present with undifferentiated symptoms, such as fatigue, chest pain, and abdominal pain. The physician's task is to go from the undifferentiated symptom to a specific diagnosis and plan for treatment. Primary care medical practice differs from tertiary care practice in that the primary care physician is generally the portal of entry into the health care delivery system. The primary care physician sees an unselected population of patients whose illness rate approaches that of the general population. Tertiary care subspecialists care for a select population of patients who have already passed through the primary care filter and whose rate of illness is different from that of the general population.

Traditional medical textbooks are written by tertiary care subspecialists, and reflect the selection bias inherent in the patient population whom they care for. These textbooks tend to be exhaustive in scope, and seldom discuss either the relative prevalences of different disease processes or the relative information content of different tests used to diagnose these diseases. A textbook which is organized around symptoms instead of diseases or organ systems, that discusses the relative probabilities of

different diagnoses based on the prevalence of diseases in the general population, and discusses the sensitivities and specificities of various symptoms, signs, and laboratory studies for these diseases, is sorely needed by primary care physicians.

Seller's book *Differential Diagnosis of Common Complaints* is a first step in the right direction. The book is organized around the common complaints that patients present to primary care physicians. The thirty-one symptoms reviewed account for more than seventy percent of the chief complaints with which physicians are confronted. Each chapter is divided into sections. The introduction lists the most common causes of the symptom. "Nature of the Patient" discusses the relative prevalences of disease processes in different patient subgroups presenting with the symptom. "Nature of the Symptom," "Associated Symptoms," "Precipitating and Aggravating Factors," and "Ameliorating Factors" discuss qualitative aspects of the symptom which are predictive of the different disease processes. "Physical Findings" discusses physical findings in the different diseases. "Diagnostic Studies" discusses laboratory studies that are useful in the differential diagnostic process. "Less Common Diagnostic Considerations" mentions the rarer diseases that may cause the symptom. Each chapter ends with a table that summarizes the information presented in these sections.

The book is somewhat lacking in quantitative data regarding disease prevalences and sensitivities and specificities of symptoms, signs, and laboratory studies. This type of information is vital to a quantitative approach to medical decision making. The lack of this information is not necessarily due to an oversight on the part of the author. This type of information is scarce in the medical literature, and when present, is somewhat difficult to find. *Differential Diagnosis of Common Complaints* should be of most use to medical students rotating through primary care clinical services, and to resident physicians in the primary care specialties. It also could be useful to the practicing physician wishing to review the differential diagnosis of common patient complaints.

—Stephen J. Spann, MD
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References:

1. A. Morales et al., New England Journal of Medicine: 1221 November 12, 1981.
2. Goodman, Gilman — The Pharmacological basis of Therapeutics 6th ed., p. 176-188. McMillan December Rev 1/85.
3. Weekly Urological Clinical letter, 27:2, July 4, 1983
4. A. Morales et al., The Journal of Urology 128: 45-47 1982

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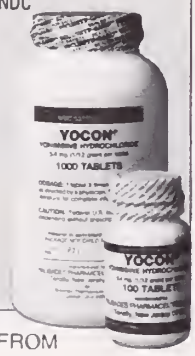

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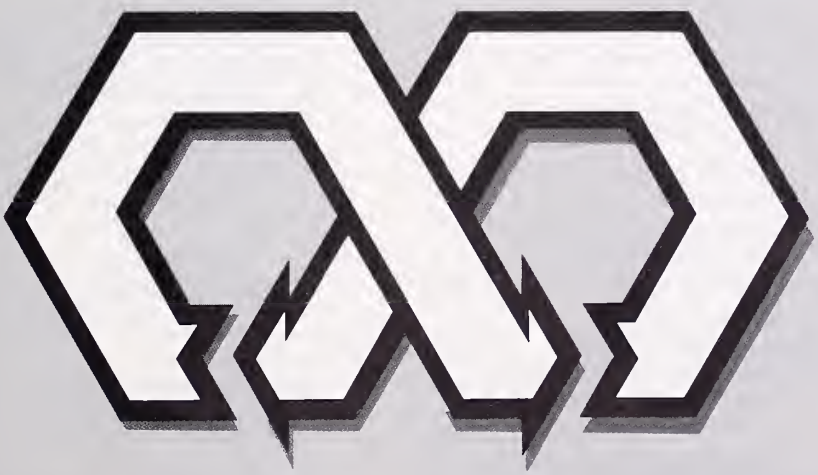

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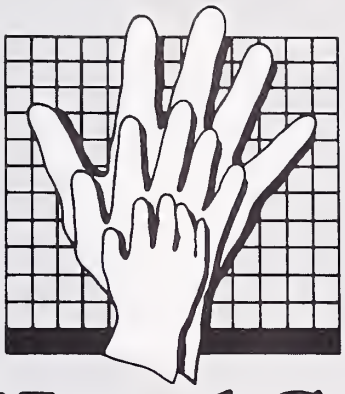

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News

Readers are encouraged to submit news items of interest to Oklahoma physicians. Where dates of meetings, etc, are important, please remember that each issue closes on the first day of the *preceding* month and reaches subscribers in the latter half of the month of publication.

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The Oklahoma State Medical Association Auxiliary addresses the needs and concerns of physician spouses from around the state. The auxiliary is composed of nearly 1300 members who share the common belief that through our involvement we can be effective proponents of better health in our state. At the same time, these individuals have a diversity of talents and interests. It is this combination of diverse talents and a common goal of better health for individual communities that makes the OSMAA such a unique organization of which to be a member.

The OSMAA has again decided to focus on membership this year as one of its major goals. The purpose of this goal is to affect membership both qualitatively and quantitatively. The organization wishes to enhance the quality of membership through the process of meeting the ever changing needs of its members. These needs range from social to intellectual to emotional in scope, with activities designed to meet these needs on all levels of auxiliary membership. In terms of increasing the membership, the basic purpose is to inform potential members of all the benefits of joining this organization.

The 1989-90 year was launched successfully with the implementation of a new idea that had been suggested by the auxiliary's long-range planning committee. The new idea was a Board Retreat. Thirty auxilians from throughout the state assembled in Norman in mid-July for the event. The retreat combined aspects of the annual membership meeting with the seminars typical of a fall confluence. The added bonus was the time to get acquainted with those state and county leaders with whom one would be working throughout the year. The retreat was an example of the way in which the OSMAA is continually trying to design programs to meet the needs of its members.

In the area of membership, several specific goals were defined. These goals include (1) the identification and recruitment of potential Resident Physician/Medical School Spouses (RP/MSSs), (2) the identification and recruitment of potential Members-at-Large (MALs), (3) the recognition and appreciation of current members for their auxiliary contributions and accomplishments, and (4) the recognition and appreciation of long-standing auxilians such as the spouses of retired or deceased physicians. These goals will be attained through effective coordination and communication by the state and county membership teams. County auxiliaries have been asked to work on the above mentioned goals in some respect at every meeting this year.

Membership in the OSMAA is indeed a privilege. To be eligible for this membership, the only requirement is that the person must be a spouse of a physician who is a member of their county medical society and of the OSMA. With your auxiliary membership comes a wealth of information and opportunities. The information that a member receives ranges from current legislation to current health issues and ways to become involved and make an impact in these areas. The opportunities arise from the ability to be involved in the auxiliary's efforts to financially assist the American Medical Association Education and Research Foundation (AMA-ERF) and from the ability to use one's talents to become an effective leader in the organization. One of the most compelling reasons to be a part of the auxiliary is the individuals who comprise the organization. Auxilians are a talented, resourceful, and exciting group of which to be a part.

The OSMAA is the only organization that addresses specific concerns and problems unique to the medical family. It provides peer support, personal development, and a unified voice on medical issues and legislation. The auxiliary is your organization and its most important asset is YOU! If you are not currently a member or if you know of someone who would like to join, please use the form below. For those of you who are members, welcome to the start of another exciting auxiliary year!

—Susan Paddack (Mrs Gary L.)
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■ **The Board of Trustees of the Oklahoma State** Medical Association (OSMA) is now accepting nominations for the 1990 Donald J. Blair Friend of Medicine and A.H. Robins awards. The Blair award recognizes a member of the laity who has rendered outstanding service and support to the medical community, and the Robins award recognizes a physician for contributions to the community. Nominations also are being sought for the first Mark R. Johnson, MD, Practitioner of the Year Award, to be presented to "that physician who best exemplifies the qualities of humility, dedication, and service in his or her practice of medicine."

Nominations should be directed to the Board of Trustees or OSMA executive offices, 601 Northwest Expressway, Oklahoma City, OK 73118. Winners will be selected at the board's February meeting and announced at the Annual Meeting next May.

■ **Family physician Edward W. Allensworth,** MD, Vinita, has been appointed to a seven-year term on the Oklahoma State Board of Medical Licensure and Supervision. Dr. Allensworth, a 1961 graduate of the University of Oklahoma College of Medicine, was named to the post by Governor Henry Bellmon. He succeeds Rollie E. Rhodes, Jr., MD, Tulsa, whose term had expired.

■ **Oklahoma City otologist Jack Van Doren** Hough, MD, has been awarded a Presidential Citation by the American Academy of Otolaryngology–Head and Neck Surgery for dedication to the specialty. Dr Hough is known internationally as a pioneer in microscopic ear surgery and has perfected several surgical techniques and instruments for hearing restoration and middle ear reconstruction. The award was presented "in recognition of his frequent contributions to the discovery and dissemination of new scientific information in this specialty and for his dedication and devotion in the service of his Creator and his patients."

■ **The September issue of *PLICO News* notes** that since its inception on January 1, 1980, the Physicians Liability Insurance Company (PLICO) has paid out more in total losses in general surgery than in any other specialty. Ranking the specialties by total losses incurred, the top ten are (1) general surgery, (2) obstetrics/gynecology, (3) family practice, (4) anesthesiology, (5) orthopedic surgery, (6) general practice, (7) neurological surgery, (8) internal medicine, (9) emergency medicine, and (10) residents. Neurological surgery, however has the highest average incurred loss, and obstetrics/gynecology ranks first when considering the number of claims per 100 insured medical doctors in each specialty. The average incurred loss per claim among all specialties was $22,051.

■ **James R. Geyer, MD, Oklahoma City, was** recently appointed Oklahoma State Chairman of the American College of Surgeons' (ACS) Cancer Liaison Program. The program is an integral part of the Commission on Cancer of the ACS. Dr Geyer is a member of a national network of 2,300 volunteer cancer liaison physicians who provide leadership and support for commission activities. As state chairman, he will help select and guide the Oklahoma volunteers in the implementation of local cancer programs designed to improve patient care.

■ **The Seventeenth Annual Oklahoma Physi**cians Winter Seminar will be held from December 27, 1989, to January 2, 1990, at the Foxpine Inn, Copper Mountain, Colo. For registration information, contact Contemporary Medical Educators, c/o Irwin H. Brown, MD, Doctors' Medical Plaza–South, 3435 NW 56th Street, #206, Oklahoma City, OK 73112, (405) 946-0548.

■ **The Oklahoma Society to Prevent Blindness** has presented its Public Service Award to James M. Richard, MD, Oklahoma City ophthalmologist. The award is given "in recognition of outstanding service in advancing the goal of saving sight."

■ **Bradley K. Farris, MD, is the recipient of the** 1989 Edward and Thelma Gaylord Faculty Award. A neuro-ophthalmology specialist at the Dean A. McGee Eye Institute, Dr Farris was chosen by residents to receive the award, which honors a faculty member for his or her medical teaching abilities.

■ **Seminars on human immunodeficiency virus** (HIV) pre- and post-test counseling will be conducted January 16-18 in Oklahoma City and January 23-25 in Tulsa. Sponsored by the Oklahoma State Medical Association, the workshops are for clinic or office personnel responsible for counseling patients tested for HIV. Locations will be announced at a later date. For registration information, contact OSMA Special Projects Coordinator Claudia Kamas, (405) 843-9571 or 1-800-522-9452.

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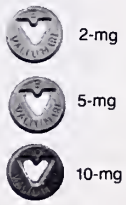

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JOURNAL
OKLAHOMA STATE MEDICAL ASSOCIATION
DECEMBER 1989

LEADERS IN MEDICINE

Leroy Goodman, MD

Oklahoma City Clinic

Multiple Specialty Clinics

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Kent C. Hensley, M.D.
Leslie A. Arneson, M.D.

Aviation Medicine 271-2728
Leslie A. Arneson, M.D.

Behavioral Medicine 271-2453
Lucien D. Rose, Ph.D.
William J. Shaw, Psy.D.

Cardiology 271-2733
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Charles W. Robinson, M.D.
Thomas R. Russell, M.D.
Paul C. Houk, M.D.
Alan R. Puls, M.D.

Cardiovascular-Thoracic Surgery 271-2733
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R. Mark Bodenhamer, M.D.

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Endocrinology 271-2717
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Ronald P. Painton, M.D.
Jonathon L. Davis, M.D.

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David W. Rader, M.D.
Terry N. Copeland, M.D.
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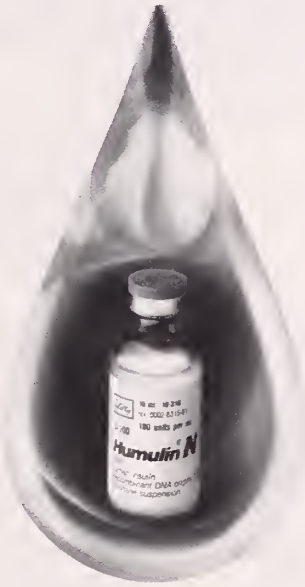

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JOURNAL

OKLAHOMA STATE MEDICAL ASSOCIATION

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Leroy Goodman, MD, retired after more than fifty years of general practice in Yukon, is featured as one of Oklahoma's Leaders in Medicine.
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Yet consider, one three-ounce serving of lean sirloin contains 2.8 mg of iron, about forty to sixty percent of which is heme iron, the most bioavailable form. In addition, the presence of beef or other meats in a meal increases the bioavailability of nonheme iron from foods such as vegetables and grains.

Importantly, lean beef can also meet fat and cholesterol guidelines of most leading heart and health authorities. The how-to's are good advice for almost anyone.

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These six cuts also simplify portion control. Four ounces uncooked equals about three ounces cooked. Grilling, broiling and roasting add no extra fat in cooking. And the taste of beef makes it easy to dispense with fat-laden sauces.

Carefully chosen, prepared and served, "The Skinniest Six" provide an impressive list of essential nutrients for under 180 calories per three-ounce serving.

And as part of a specific plan to increase dietary iron, in a balanced diet beef can be one of the best-tasting recommendations you'll ever make.

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155 calories	162 calories	172 calories	162 calories	177 calories	174 calories
5.5 g total fat	6.4 g total fat	7.6 g total fat	5.3 g total fat	7.4 g total fat	7.9 g total fat
(2.1 g saturated fat)	(2.3 g saturated fat)	(3.0 g saturated fat)	(1.8 g saturated fat)	(3.0 g saturated fat)	(3.1 g saturated fat)
59 mg cholesterol	69 mg cholesterol	65 mg cholesterol	72 mg cholesterol	76 mg cholesterol	72 mg cholesterol

Uncooked whole cuts are shown for purpose of identification.

Composite of cooked retail cuts of beef*

Protein	25.9 g
Iron	2.7 mg
Zinc	6.0 mg
Vitamin B-12	2.28 mcg
Thiamin	.08 mg
Niacin	3.6 mg
Sodium	55 mg
Total Fat	8.7 g
(Saturated Fat)	(3.4 g)
Cholesterol	76 mg
Calories	189

United States Department of Agriculture, "Nationwide Food Consumption Survey, Continuing Survey of Food Intakes by Individuals. (NFCS, CSFII)" Report No. 86-1. *Nutrients in 3 oz. trimmed and cooked: USDA Handbook 8-13, Rev 1986.

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A Cold December Night

Many years ago on a cold winter night, in a small village, a relatively insignificant event took place. The memory of it still exhilarates me.

This event truly took place, in war time — actually three wars ago, as we Americans count our wars. Then, late summer amphibious landings put World War II British and American forces ashore on the mainland of Europe, in Southern Italy. During the autumn, the infantry advances up the Italian boot were agonizingly slow and costly; the Apenine Mountains were ideal defense terrain. Every attack was up a steep hill, against an implacable German army well versed in the killing business. That year winter came to Italy with the Allied forces enmeshed in the tortuous Italian mountains.

My infantry regiment, like others nearby, was inching up the slope of a mountain ridge. Above us, on the crest of the pass, German artillery and machine guns were nested under the crags and between the rocks. One narrow road snaked up the mountain over the pass. We were to take control of the pass, but the intense and deadly gunfire from above reduced our movements to a few feet at a time, and to stealthy patrols in the dark of the night.

Along the road was a small village of about two dozen ancient stone houses that may have been standing when Michelangelo painted. The village was named Pozzilli, but its census has never earned it a spot in the atlas. The embattled infantrymen used Pozzilli's stone walls and cellars as welcome shelter, from both the bitter wind and the artillery shells that crashed down. Scattered among the stone houses and cellars were about two dozen Italian civilians entrapped in their own homesteads by the vagaries of war. The movement of anyone outside a house, and especially on the road, elicited a hail of explosive steel from the guns entrenched above the village.

With winter came storms, and a cold steel-gray Italian sky lowered and rained cold rain; and sometimes it sleeted and other times it snowed. The days were dark and the nights were as black as the Ace of Spades, and a soldier's uniform was unrecognizable at ten feet. Our supply truck crept along the road at night to bring in rations and ammunition, and the ambulance sneaked out the wounded and the dead from the regimental aid station. The deadlocked battle ratcheted up the mountain an infantry squad at a time, a night at a time.

And on one of those cold black December nights that was lacerated by machine guns and winkingly lit by the orange flashes of cannon fire, an Italian man and his pregnant wife found their way into the regimental aid station. They crept from their cellar refuge through the black and deadly night, into the infantry medical station. For her time had come to deliver her child, and escape was impossible and there was no other possible assistance.

As a front line triage point, the aid station was sparsely equipped and crowded with fire-fight casualties. But our regimental surgeon attended the lady's labor and delivery, interspersed with his ministrations to the soldiers wounded in battle. With fortune, an uncomplicated delivery of a healthy babe was accomplished before dawn, and the Italians, now a family, stole back to their cellar hideout.

The next day, the news of the successful delivery spread among us besieged soldiers dug into the rocky hillside. I was inspired by the implicit faith the Italian woman displayed when she turned to an alien army physician in her hour of need. I was further uplifted that the physician had given his medical skill to her, under most difficult circumstances, in a spirit of service to a fellow human in need.

The memory of this rustic event still reminds me that the practice of medicine offers unique opportunities to express the noble aspect of the human spirit.

Ray V. McIntyre, M.D.

The Editors and Staff

of the Journal and the

Oklahoma State Medical Association

extend to you and your loved ones

our best wishes for

A Joyous Holiday and

A Happy New Year

Health Policy Brief: Obstetrics in Nonmetropolitan Oklahoma

Michael Lapolla, Carolanne Mahan

This brief is a summary of a 68-page analysis of a survey conducted by the Center for Health Policy Research, Oklahoma Medical Research Foundation, Tulsa. There are 9 appendices and 96 data analysis tables in the complete analysis.

The survey was conducted in the summer and fall of 1988. Survey instruments were mailed to all Oklahoma obstetricians and family and general practitioners not practicing in Tulsa or Oklahoma counties. There were 300 responses, 274 of which were validated for inclusion into the study.

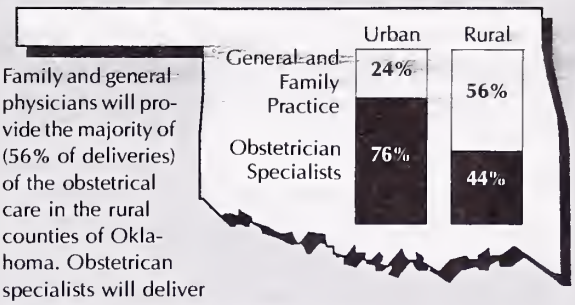
The complete survey will be of interest to some institutions and groups and is available upon request. Customized analysis of the survey variables also is available to interested parties upon request.

Less than half of family and general physicians are practicing obstetrics. Since 1985, a significant percentage of these physicians discontinued the provision of obstetrical services. A fundamental component of primary health care is obstetrical care service. The availability of obstetrical care is of concern in Oklahoma, because of Oklahoma's (1) relatively poor national rankings in the utilization of timely and adequate prenatal care, and (2) significant investments in training primary care physicians to provide that care in nonmetropolitan areas.

Some compelling reasons for examining obstetrical services in the 75 nonmetropolitan counties of the state are:

- There is a significant state investment in the *training of primary care physicians.* It is the intent that these Oklahoma-trained family practice and general practice physicians will practice in underserved and/or rural areas of the state.
- A previously published Center for Health Policy Research study, concerning *physician distribution* by specialty, indicated that there are many areas of Oklahoma in which the market size and density, coupled with limited support services, will preclude

Obstetrical Services in Nonmetropolitan Oklahoma



Family and general physicians will provide the majority of (56% of deliveries) of the obstetrical care in the rural counties of Oklahoma. Obstetrican specialists will deliver three of four babies (76% of deliveries) in urban nonmetropolitan Oklahoma. This statewide data set does not include physicians practicing in the large metropolitan centers of Oklahoma and Tulsa Counties.

This study suggests that the obstetrical service corps of physicians is being depleted. A disproportionate share of high fixed cost–low volume providers are discontinuing obstetrics for reasons related to liability costs and concerns. The physicians with more obstetrical training and experience are continuing to offer obstetrical services to their patients and communities.

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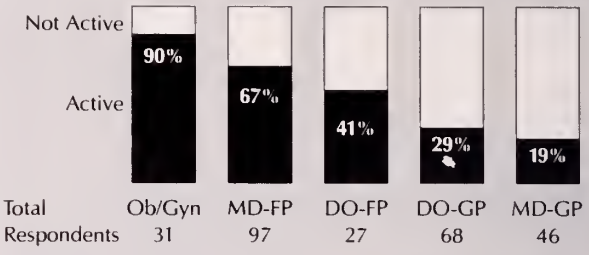
Direct correspondence to the Oklahoma Medical Research Foundation, Center for Health Policy Research, 600 South College Avenue, Tulsa, OK 74104.

Table 1. Respondents by Professional Specialty

Specialty	Number	Percent
MD-family practice	97	35.4%
MD-general practice	46	16.8%
DO-general practice	69	25.2%
DO-family practice	29	10.6%
Obstetrician/gynecologist	32	11.7%
Specialty not indicated	1	0.3%
Total respondents	274	100.0%

Table 2. Respondents by Activity Status in Obstetrics and by Specialty (5 missing responses)



There were 269 respondents indicating their activity status and specialty. The shaded portion of the bar indicates the percentage that are active. The remainder either started and quit obstetrics or never started.

the practice of obstetricians. Those areas will be served by primary care general physicians or not served at all.

- The State Regents for Higher Education, and others, have expressed significant interest in the *quality of postgraduate medical education* in Oklahoma.
- It is reasonable to assume that graduates of primary care training programs in family and general practice will *offer obstetrical services,* as an integral component of primary care, in underserved and/or rural areas of Oklahoma.
- Obstetrical services offered by family and general physicians will be characterized by *high fixed costs and small market share.* This high fixed cost charged to relatively few patients may influence the economic viability of these services.
- The patient utilization of available obstetrical care in *Oklahoma fares poorly* compared to national data.

It should be of public policy interest to examine the practice patterns of Oklahoma physicians who are likely to practice obstetrics. The trends and patterns of practice will influence obstetrical care in nonmetropolitan Oklahoma.

Physician Specialties

There are three physician specialties included in the study population. They are obstetricians, family practitioners, and general practitioners. These categorizations are as self-reported by responding physicians. It is assumed that obstetricians (MD and DO) and family practitioners (MD and DO) are graduates of an accredited residency program.

General practitioners are assumed to be allopathic physicians who have one or more years of postgraduate medical education but who have not completed an accredited residency program; and osteopathic physicians who have completed a one-year postgraduate internship.

The abbreviations used are:

MD-FP Allopathic family physician
MD-GP Allopathic general phyhsician
DO-FP Osteopathic family physician
DO-GP Osteopathic general physician
OB Allopathic or osteopathic obstetrician

Postgraduate Training Levels

Postgraduate medical education refers to the number of years of formal postgraduate training a physician has completed. For example, a physician reporting the completion of one year of postgraduate training is referred to as a PGY-1 physician.

Nonmetropolitan Counties

The purpose of this study is to examine physician provided obstetrical services in nonmetropolitan Oklahoma, that is, in the entire state except for Tulsa and Oklahoma counties.

References to *nonmetropolitan Oklahoma* refer to these 75 urban and rural counties. The definitions of urban and rural counties are per the Bureau of the Census Metropolitan Statistical Area designations. Counties within an MSA are designated urban; all others are designated rural.

Methodology and Response Rates

The Center for Health Policy Research initiated a study of physicians likely to provide obstetrical care in the 75 nonmetropolitan counties of Oklahoma. Tulsa and Oklahoma counties were excluded. This study would determine which medical specialties provided the obstetrical care, and what characteristics separated the providers from nonproviders.

Questionnaires were mailed to the target population of 944 physicians in August of 1988. The center received 300 responses, some of which were from physicians who had retired their entire practice since the last mailing list was prepared, and a few were returned substantially incomplete.

Table 3. Deliveries Compared to Nonmetropolitan Physician Census, Respondent Physicians, and Physicians Active in Obstetrics

Specialty	(944) Nonmetro Census		(274) Survey Respondents		(113) Active Practice		Pct of Deliveries
Obstetrician (MD-DO)	98	10%	33	12%	28	21%	58%
MD-family/general practice	587	62%	133	52%	84	56%	29%
DO-family/general practice	259	28%	98	36%	31	23%	13%
Totals	944	100%	274	100%	133	100%	100%

This table indicates that obstetrician specialist physicians represent 10% of the physician census and 12% of respondents, but they represent 21% of those in active obstetrical practice and provide 58% of deliveries in nonmetropolitan Oklahoma. The reverse is true for general and family physicians.

This resulted in a sample size of 274 for analysis purposes. The gross response rate was 32% and the net response rate was 29%.

All data elements of the survey were analyzed in detail. The summary of all data and tables analyzed are in the complete study. This summary will include abbreviated summary tables for presentation purposes.

Survey Population

The geographical distribution of the survey respondents was statistically equivalent to the known physician distribution. The specialty distribution and age distribution were statistically different from the state physician census.

The survey population was over-represented with DO family and general physicians (36% to 28%) and under-represented with MD family and general physicians (52% to 62%).

The survey population was also younger than the physician census. This is possible due to the older physicians, who are disproportionately MD general physicians, not having an obstetrical practice and thus not responding.

The data should be interpreted knowing these observed differences. The survey population and practice activity status are depicted in tables 1 through 3.

Obstetrical Care Activity Status

Slightly less than half of the physicians in the survey had an active obstetrical practice.

Given that there is a realistic expectation that all survey respondents were trained to practice obstetrics as part of their professional discipline, the fact that less than half practice obstetrics bears examination.

Almost 90% of the respondents initially practiced obstetrics but many discontinued the practice in a relatively short time. Since 1985, 20% of the physicians (47) in the survey sample discontinued obstetrics. A disproportionate number of (30 of 47) physicians quitting obstetrics were osteopathic physicians.

Deliveries

The average number of deliveries per active physician is 83 per year. The median number is 50 per year for all physicians, and 30-35 for general and family physicians.

The survey response group provided a self estimated 10,658 deliveries in the 12 months prior to the survey (Table 4). Of these deliveries, 8,884 were vaginal deliveries and 1,774 (17%) were cesarean.

There were 29,240 births in these nonmetropolitan counties in 1987. The survey respondents accounted for 29% of the physician census, and performed an estimated 36% of the deliveries.

Only 21% of the physicians offering obstetrical care are specialists in obstetrics. Therefore 79% of all physicians offering obstetrical care are primary care general physicians.

Half of the physicians *offering* obstetrical services in nonmetropolitan Oklahoma are family practice (MD) physicians.

However, when the *amount of service* is examined, the percentage distributions predictably are reversed. Table 4 indicates the levels of participation in the provision of obstetrical services.

Of as much or more interest is the amount of postgraduate training of physicians performing obstetrical services. Table 4 indicates that 86% of the babies born in nonmetropolitan *urban* counties in Oklahoma were delivered by physicians with three or more years of postgraduate training, but only 72% for babies born in *rural* counties.

Only about one in five of all obstetrical cases were handled by physicians with one or two years of training.

Table 4 also indicates the differences in the percent of deliveries performed by obstetricians when urban and rural counties are examined separately. Obstetricians will perform 76% of the de-

Table 4. Deliveries by Respondent Physicians, Nonmetropolitan Urban and Rural Counties, and Type of Delivery

Specialty	Vaginal Deliveries (3,725) Urban	Vaginal Deliveries (5,159) Rural	Cesarean Deliveries (668) Urban	Cesarean Deliveries (1.106) Rural	All Deliveries (4,393) Urban	All Deliveries (6,265) Rural
Obstetrician (MD-DO)	77%	42%	74%	56%	76%	44%
MD-fam general practice	16%	40%	10%	36%	15%	39%
DO-fam general practice	7%	18%	16%	8%	9%	17%
Total deliveries	100%	100%	100%	100%	100%	100%
Postgraduate Training						
Four years and more	77%	46%	74%	57%	76%	48%
Three years	10%	24%	7%	24%	10%	24%
Less than 3 years	13%	30%	19%	19%	14%	28%
Total deliveries	100%	100%	100%	100%	100%	100%

liveries in urban counties but only 44% for rural counties.

Postgraduate Training

The length of postgraduate medical education is highly predictive in determining the likelihood of a physician practicing obstetrics in nonmetropolitan Oklahoma.

In order to adjust for physicians quitting obstetrics for purposes of retirement or practice curtailment, only those physicians under 45 years of age are examined at Table 10. There were 150 of these physicians, which represented 55% of the survey respondents. Physicians with only one or two years of postgraduate training, and less obstetrical training, are much less likely to offer obstetrical services to their patients. However, almost all of PGY-3 and PGY-4 physicians will offer the service. The resulting percentages are at Table 10.

Only 28% of PGY-1 and PGY-2 physicians under 45 years of age had an active obstetrical practice, as opposed to 84% of PGY-3 and 100% of PGY-4 physicians. Of additional note, 70% of PGY-1 and PGY-2 physicians initiated a practice, but 42% discontinued as opposed to only 10% for PGY-3 physicians.

If public policy is to produce general and family physicians, clearly additional postgraduate training is required past the initial internship year to ensure more adequate availability of obstetrical services in rural Oklahoma.

Allopathic and Osteopathic Professions

The amount of postgraduate training is characteristic of the professions. It follows that there will be professional differences in which physicians offer obstetrical services.

As in the analysis above, physicians under 45 years of age were specifically examined (Table 11).

Younger allopathic family and general physicians are twice as likely to practice obstetrics than osteopathic physicians of the same specialty and age group.

Osteopathic physicians started then quit obstetrics at three times the rate of allopathic physicians. When limiting the analysis to *only rural counties,* almost the identical percentage distributions result.

Hospital Privileges

Complete obstetrical care includes the professional certification to perform surgeries related to obstetrics, to include cesarean section surgery. One of every six deliveries performed by the respondents was a cesarean section surgical procedure.

Only 18% to 27% of the osteopathic general and family physicians, respectively, reported hospital privileges for C-section surgeries.

On the other hand, 58% to 79% of the allopathic general and family physicians, respectively, reported hospital privileges for C-section surgeries. This ratio also holds true for the amount of postgraduate medical training physicians reported.

Size of Obstetrical Practices

A significant number of providers will deliver less than 25 babies per year. Over half the providers will perform less than 50 deliveries per year. The group that provides over 75% of deliveries is almost solely obstetrician specialists (Table 6).

As liability costs are spread to fewer patients, it may be more difficult to charge a small number of patients increasing liability premium costs.

Medicaid and Medically Needy Patients

Less than 10% of responding physicians chose not to

Table 5. Physicians with an Active Obstetrical Practice Reported Cesarean Section Hospital Privileges

Specialty	Number	Yes	No
Ob/gyn	28	100%	0%
MD-family practice	65	79%	21%
MD-general practice	9	58%	43%
DO-family practice	11	27%	73%
DO-general practice	20	18%	82%
Totals	133	70%	30%

Table 6. All Responding Physicians with an Active Obstetrical Practice, by Reported Annual Deliveries

	Vaginal		Cesarean		All Deliveries	
Annual Deliveries	Phys	Pct	Phys	Pct	Phys	Pct
0-24	36	28%	103	78%	29	22%
25-49	35	26%	16	12%	32	24%
50-74	31	23%	3	2%	31	23%
75+	27	20%	6	4%	35	26%
No response	4	3%	5	4%	6	5%
All Physicians	133	100%	133	100%	133	100%

This table is read as follows: There were 36 reporting physicians that provided between 0 and 24 vaginal deliveries during the last 12 months.

This represented 28% of physicians reporting an active obstetrical practice. Almost half of the responding providers had less than 50 annual deliveries.

provide care to Medicaid or medically needy patients. In other words, nine out of ten physicians are willing to assume this responsibility while knowing in advance that they will not be paid a full fee, if at all.

Almost half (46%) of the responding physicians with an active obstetrical practice indicate that over half of their practice was a recipient of, or was eligible for, Medicaid coverage.

Sixty percent of the responding physicians with an active obstetrical practice say they offer obstetrical services to Medicaid patients *without* restriction, another 32% say they offer services *"selectively"* and only 8% say they do not offer services to Medicaid patients at all.

Less than half (44%) of the responding physicians with an active obstetrical practice say they offer obstetrical services to the medically needy, uninsured, and low income patients without restriction. Only 10% of these same physicians say they do not offer obstetrical services to the medically indigent at all.

There was no significant difference, by specialty or by level of postgraduate training, in the likelihood of physicians providing care for Medicaid or other low income patients.

Physicians were asked to respond to any difficulties they have encountered with the Medicaid process. This question was only asked of those that had an active obstetrical practice (133 physicians).

Respondents were given eight possible choices and asked to respond with all choices that applied to their practice. One of the choices was that they have no problems.

The responses were surprising in the percentages of perceived problems they encountered. Seven out of ten physicians reported problems with eligibility approvals, and a majority responded that reimbursements were a problem.

Liability concerns were only the fifth most often mentioned, being cited by 44% of the respondents (see Table 7).

Practice and Care Enhancements

When physicians with an active obstetrical practice are asked what would enhance their ability to provide better obstetrical care, the two most frequent responses were "better trained hospital staff" and "more continuing medical education" (both at 21.8%).

Physicians with less than 3 years of postgraduate training were somewhat more likely to cite "more continuing education."

Those with 3 years or more postgraduate training were more apt to cite "better trained hospital staff." "Better hospital facilities and/or equipment" and "networking with other physicians" each contributed more than 15% of the responses.

Nine percent (9.2%) of the physicians with an active obstetrical practice reported that their hospitals did not have "anesthesia coverage within 30 minutes," and 11% (10.8%) indicated that their hospitals did not have "emergency C-section services."

Table 7. All Physicians with Active Obstetrical Practice Perceived Problems with Medicaid

Perceived Problem	Responses	Percent
Eligibility approval delays	93	70%
Reimbursement too low	91	68%
Reminbursement too slow	77	58%
Too much paperwork	67	50%
Liability concerns	59	44%
Patients are "different"	22	17%
Other	11	8%
No problems	5	4%

Patient Charges

Charges for delivery, with and without prenatal care, vary by specialty and type of delivery (vaginal or C-section). The fees for OB-GYN specialists are the highest, and the lowest are the MD-FPs.

The median reported charge for complete obstetrical care with vaginal delivery was $950; and $1,315 for complete care and C-section delivery. There was no significant distribution of these charges by specialty.

Patient Payment Patterns

Obstetrical patients do not pay for their services as well as the patient population at large. Over 62% of respondents indicated that their overall practice pays "excellent" or "good," compared to only 23% for obstetrical patients (Table 8).

The differences were not significant by specialty or postgraduate level. The obstetrical patients uniformly paid less well than other patients. This is of significance as costs of liability insurance are spread among a smaller number of patients in the practices of family practice and general practice physicians.

These physicians have a median number of deliveries between 30 and 35 per year. Given the cost of insurance and payment deficiencies of patients, it seems uneconomical for many physicians to spread the additional costs and inconveniences to only 30 patients per year. Those that do so may be motivated for more socially responsible reasons other than reimbursement.

Table 8. Payment Pattern of Patients

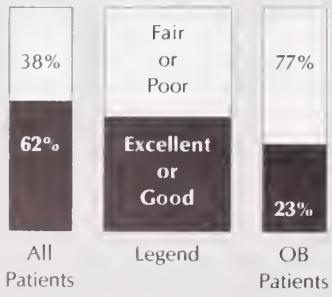


Table 9. Ratios of C-Section Deliveries to Total Deliveries (86 respondents)

Specialties	Physicians	Below 25% Pct	Over 25% Pct
Obstetrician/gyn	28	71%	29%
MD-family practice	48	73%	27%
Other specialties	7	70%	30%

Cesarean Section Ratios

The ratio of C-section deliveries to total deliveries reported by physicians with an active obstetrical practice is between 16% and 18% overall.

This is well below the controversial national average of 25% that has led to national policy debates concerning a goal to reduce the rate by half. There is not statistically significant difference between specialties in a propensity to perform Cesarean section deliveries (Table 9).

Reasons for Discontinuing Obstetrical Practices

There is a significant relationship between the amount of training in obstetrics, and the years of licensure in Oklahoma before quitting. More postgraduate training indicates a longer obstetrics practice before quitting.

Two out of every three physicians discontinuing obstetrics for liability reasons had only one year of postgraduate medical education and training. Almost three out of four physicians discontinuing obstetrics had only one year of postgraduate medical education and training.

Among those with less than 3 months training in obstetrics, 68% quit before they had been licensed 10 years, but for those with 6 months or more of training in obstetrics, only 36% quit before they had been licensed 10 years.

Reasons for discontinuing obstetrics vary by age, and the year the decision was made. Physicians under 45 years of age quit for liability reasons, and professional coverage concerns.

Those 45 years of age and over quit for other (personal or aging) reasons almost as frequently as liability issues. A key determining factor seems to be whether the physicians quit before or after 1985, a year of major liability premium increases.

Those discontinuing before 1985 did for professional backup and coverage reasons (39%) and other unspecified (33%) reasons. But after 1985, 73% discontinued because of liability concerns.

Other factors, such as amount of postgraduate training, altered the trend by year discontinued, but the strongest variable remained "year discontinued."

There were 34 physicians *under 45 years of age* that discontinued obstetrics after 1984.

These physicians were disproportionately osteo-

pathic physicians (74%), and the reasons given for the entire group were predominantly related to liability costs and concerns (74%).

Overall, 88% of osteopathic physicians who quit obstetrics (22 of the 25), did so for liability reasons, compared to 74% of the entire group.

Findings and Policy Implications

The findings of this study have implications for policymakers in higher education, medical education, professional organizations, public service organizations, and the general public.

This study indicates that there are two contradictory outcomes affecting the availability of obstetrical care in nonmetropolitan Oklahoma.

One outcome affects quantity of providers, and the other affects the quality of services as measured by the obstetrical training of the physicians:

Table 10. Obstetric Activity of Younger Physicians by Professional Specialty Groups, Years of Postgraduate Training, and Months of Obstetrical Training (limited to physicians under 45 years of age)

Activity Status	DO-FP/GP		MD-FP/GP		OB/GYN		Total	
Active obstetrical practice	22	(33%)	45	(67%)	17	(100%)	84	(56%)
Started but quit obstetrics	29	(45%)	10	(15%)	0	(0%)	39	(26%)
Never started obstetrics	15	(22%)	12	(18%)	0	(0%)	27	(18%)
Totals	66	(100%)	67	(100%)	17	(100%)	150	(100%)

Activity Status	PGY-1 and PGY-2		PGY-3		PGY-4 and Over		Total	
Active obstetrical practice	23	(28%)	43	(84%)	18	(100%)	84	(56%)
Started but quit obstetrics	34	(42%)	5	(10%)	0	(0%)	39	(26%)
Never started obstetrics	24	(30%)	3	(6%)	0	(0%)	27	(18%)
Totals	81	(100%)	51	(100%)	18	(100%)	150	(100%)

Activity Status	0, 1, or 2 months		3, 4, or 5 months		6 months and over		Total	
Active obstetrical practice	5	(10%)	30	(68%)	46	(84%)	81	(55%)
Started but quit obstetrics	21	(45%)	8	(18%)	9	(16%)	38	(26%)
Never started obstetrics	21	(45%)	6	(14%)	0	(0%)	27	(19%)
Totals	47	(100%)	44	(100%)	55	(100%)	146	(100%)

Table 11. All Responding Physicians by Profession, by Age, and by Activity Status in Obstetrics

	Allopathic (MD) Physicians			Osteopathic (DO) Physicians		
Activity Status	Under 45 years	45 years & older	Total	Under 45 years	45 years & older	Total
Active obstetrical practice	74%	46%	60%	33%	33%	33%
Started but quit obstetrics	12%	49%	31%	44%	63%	50%
Never started obstetrics	14%	5%	9%	23%	4%	17%
Totals	100%	100%	100%	100%	100%	100%

Table 12. All Responding Physicians by Activity Status in Obstetrics and by DHS Region

Activity Status	North East	South East	Central	North West	Southwest	Statewide
Active obstetrical practice	41%	39%	41%	61%	63%	50%
Started but quit obstetrics	41%	46%	45%	32%	32%	38%
Never started obstetrics	18%	15	14%	7%	5%	12%
Totals	100%	100%	100%	100%	100%	100%

• The obstetrical service corps is being depleted. This will require some patients to travel further for less convenient care. Also, care to the medically needy may be less convenient as transportation becomes an additional expense.

• But, those physicians leaving the practice are the least trained and experienced, and provided the lowest volume of care.

It is possible that the overall quality of obstetrical care may not be compromised, but actually improved.

Liability and Training Issues

Given that the survey represented an estimated 30% of all physicians, one may estimate that 163 physicians discontinued obstetrics since 1985 . . . and that 121 did so for liability reasons.

During the same period, only an estimated 50 physicians started an obstetrical practice. This would represent a significant net depletion in the number of obstetrical providers (a loss of 113) in the state.

Liability issues are the major reason cited by Oklahoma family and general physicians for discontinuing obstetrical services. Off all physicians leaving obstetrical service just since 1985, 74% did so for liability-related reasons. To what extent the liability issues is a proxy for other reasons is unclear and beyond the scope of this survey.

An initial observation is that the likelihood of a physician practicing obstetrics in Oklahoma is directly proportional to the level of postgraduate medical education and obstetrical training received. This finding may be masked by other aspects of the issue.

For example, osteopathic physicians in Oklahoma predominantly have only one year of postgraduate training, are required to pay much higher premiums for liability insurance, and therefore tend to discontinue obstetrics very quickly due to the relatively low patient volume compared to liability costs. It is estimated that osteopathic physicians will pay up to three times the liability insurance premium cost of comparably trained allopathic physicians.

It is of note that three-year-trained family physicians, under 45 years of age, are three times more likely to offer obstetrical services than lesser trained physicians. One-year-trained general physicians are four times as likely to start an obstetrical practice, then discontinue it, as multi-year-trained physicians.

Therefore the issue is a question of whether osteopathic liability costs are excessively high because of lower levels of training, or are they high for reasons not related to practice issues at all, ie, few carriers and a monopolistic market?

Regardless of the reason, Oklahomans are not relatively well served by osteopathic general physicians in the area of obstetrical service.

This component of primary care could be enhanced by additional training if that training would result in risk reassessments that would reduce liability insurance premiums. If not, then even additional training may not likely ensure that these physicians will practice obstetrics.

Table 13. Physicians Discontinuing Obstetrics Between 1985 and 1988 by Level (Years) of Postgraduate Training and by Reason

Reasons for Discontinuing	PGY-1	PGY-2	PGY-3	PGY-4	Total
Liability costs and concerns	56%	2%	10%	6%	74%
Lack of adequate coverage	8%	2%	2%	0%	12%
Lack of adequate training	4%	0%	0%	0%	4%
Other reasons	4%	4%	2%	0%	10%
Totals	72%	8%	14%	6%	100%

Reasons for Discontinuing	PGY-1	PGY-2	PGY-3	PGY-4	Total
Liability costs and concerns	27	1	5	3	36
Lack of adequate coverage	4	1	1	0	6
Lack of adequate training	2	0	0	0	2
Other reasons	2	2	1	0	5
Totals	35	4	7	3	49

The table above provides the numbers of physicians discontinuing only since 1985 and the reasons. For example, 27 physicians with one year of postgraduate training, discontinued obstetrics for liability reasons. This represented 56% of all physicians discontinuing.

Service to Medicaid and Needy Recipients

Over 90% of nonmetropolitan physicians will offer services either without restriction or selectively to this population. The operative word is *selectively.* If the selective process effectively erects barriers to all but the most persistent patient, then one would conclude that only 60% of the physicians offer services to this group.

The selectivity of the Medicaid population is

impacted by Medicaid system components. Over half of the respondents indicated that approval delays, paperwork, and inadequate reimbursement are major concerns to them.

Provision of Services

Almost 80% of the obstetrical providers are not obstetricians. On the other hand, almost 60% of all deliveries are performed by obstetricians. Regardless of this relatively favorable delivery ratio, 40% of babies born in nonmetropolitan Oklahoma will be done so by family and general physicians.

The discussion above notwithstanding, it is inherent that training programs offer the best quality of obstetrical training to those that eventually will practice obstetrics regardless of liability costs.

The Authors

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Terminology

Nouns of multitude (eg, a pair of shoes, a gaggle of geese, a pride of lions) . . . :
a rash of dermatologists, a hive of allergists, a scrub of interns,
a chest of phthisiologists; or, a giggle of nurses, a flood of urologists,
a pile of proctologists, an eyeful of ophthalmologists; or, a
whiff of anesthesiologists, a staff of bacteriologists, a cast of orthopedic
rheumatologists, a gargle of laryngologists.

—*Journal of the American Medical Association*
190:392, 1964

Septic Arthritis in the Geriatric Population

Michael E. Joseph, MD; Kevin L. Sublett, MD; Arnold L. Katz, MD

Septic arthritis has emerged as an important infection in geriatric patients. Between 25% and 50% of all cases of nongonococcal bacterial arthritis in nonprosthetic joints occur in patients over the age of sixty years.

Thirty-three percent of nongonococcal septic arthritis occurs in the geriatric population. In this retrospective study of geriatric septic arthritis, 22 patients were reviewed. The major predisposing factor was prior history of arthritis, with the knee being the most commonly affected joint.* Staphylococcus aureus *was the major pathogen, with gram-negative organisms accounting for a significant number of infections. We think that empiric antibiotic coverage for gram-negative organisms should be initiated at the time of treatment only in patients with multiple predisposing factors for septic arthritis. The disease also may be more indolent than previously reported, leading to delayed diagnosis, treatment, and increased morbidity and mortality.

Septic arthritis has emerged as an important infection in geriatric patients. Currently, between 25% and 50% of all cases of nongonococcal bacterial arthritis in adults occurs in patients over the age of 60 years.[1-3] Furthermore, geriatric septic arthritis is often associated with a poor outcome as evidenced by a high incidence of residual joint dysfunction, the frequent development of contiguous osteomyelitis, and high mortality rates.[1]

In this study, a six-year nine-month review was conducted to evaluate nongonococcal septic arthritis in patients over 60 years of age. Results are compared to data obtained from similar reports of septic arthritis in the geriatric and general population.

Methods and Materials

Hillcrest Medical Center and St. John Medical Center are privately owned respectively 500- and 600-bed teaching hospitals in Tulsa, Okla. A review of the hospital records for all patients admitted from December 1, 1980, through August 31, 1987, revealed 113 patients with the primary or secondary diagnosis of nongonococcal septic arthritis in nonprosthetic joints. The criteria for inclusion in our study were: clinical presentation with an acutely inflamed joint, positive synovial fluid cultures for bacteria, and age greater than 60 years. Sixty-seven patients met these clinical and bacteriological criteria, and 22 patients met our age criteria and were included in our study.

Results

Ten of the patients were male, 12 female, with 21 white, and 1 black. The age range was 60 to 87 years, with a mean age of 72 years. Our geriatric patients with septic arthritis accounted for 22 of 67, or 33% of all cases of nongonococcal septic arthritis.

The predisposing factors for septic arthritis were identified (Table 1). The main predisposing factor was a history of prior arthritis present in 15 (68%)

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of the patients. Nine of these patients had rheumatoid arthritis, 5 had osteoarthritis, and 1 had psoriatic arthritis. Ten of these patients with arthritis had other risk factors for septic arthritis including extra-articular infection in 8, chronic illness in 3, and corticosteroid therapy (prednisone, 2.5 mg to 5 mg daily) in 3.

Concurrent extra-articular infection was the next most common predisposing factor, present in 10 (45%) of the patients. The infections were diverse and included cellulitis in 4 patients with associated septicemia in 1, urinary tract infection in another, pneumonia with septicemia in 2 patients, and urinary tract infection in 4 patients, with cholecystitis coexisting in one and pyelonephritis in another. Six patients had a history of trauma to the involved joint, with 3 of these being diabetic. All of the patients had at least one previously defined risk factor for septic arthritis, and 80% of these had multiple risk factors. No preceding history of intra-articular infection or intravenous drug abuse was present in any patient.

Chronic illness, including diabetes, malignancy, and chronic renal failure, was present in 8 (36%) of the patients. All of these patients had other predisposing factors, including 3 with trauma to the infected joint, 3 with a history of pre-existing arthritis, 1 with pneumonia, and 1 with cholecystitis.

Twelve different bacterial isolates were recovered from 22 patients (Table 2). *Staphylococcus aureus* was the most frequently cultured organism, occurring in 12 (54.5%) of the patients. No methicillin-resistant species of *S aureus* were present. *Staphylococcus epidermidis* was present in 5 (27.7%) of the patients. Group A beta hemolytic strep and Group D enterococcus affected 3 (4.5%) of the patients. Pneumococcus was cultured from 1 patient. Gram-negative organisms including *Escherichia coli, Pseudomonas, Klebsiella, Proteus morganni,* and *Enterobacter* were present in 5 patients. All of these patients had multiple predisposing factors including chronic illness in 3, prior arthritis in 3, extra-articular infection in 3, corticosteroid treatment in 1, and trauma in 1. Anaerobic organisms, including *Bacteroides fragilis,* and *Clostridium perfringis,* were cultured from 1 patient. Polymicrobial infections were present in 5 patients.

Table 1. Predisposing Factors for Septic Arthritis

Factor	No. of Patients (%)
Prior history of arthritis	15 (68)
Extra-articular infection	10 (45)
Chronic illness	8 (36)
Trauma	6 (27)
Immunosuppressive therapy	5 (22)
No risk factors	1 (4.5)
Intravenous drug abuse	0 (0)
Multiple risk factors	16 (73)

Table 2. Bacteria Cultured from Synovial Fluid

Organism	No. of Patients (%)
Gram-Positive Organisms	
Staphylococcus aureus	12 (54.5)
Staphylococcus epidermidis	5 (22.7)
Group A beta hemolytic strep	3 (13.6)
Group D enterococcus	3 (13.6)
Alpha hemolytic strep (pneumococcus)	1 (4.5)
Gram-Negative Organisms	
Escherichia coli	2 (9.0)
Pseudomonas	2 (9.0)
Klebsiella	1 (4.5)
Enterobacter	1 (4.5)
Proteus morganii	1 (4.5)
Anaerobes	
Bacteroides fragilis	1 (4.5)
Clostridium perfringis	1 (4.5)

*Polymicrobial infections were present in five patients.

The numerous sites of joint involvement were evaluated (Table 3). The most frequently infected joint was the knee, which was involved in 8 (36%) of the patients. The interphalangeal joints were involved in 5 patients and the ankle in 2 patients. One patient each had a hip, elbow, or shoulder joint affected. Multiple joint involvement occurred in 3 patients, 2 with bilateral knees and 1 with a wrist and ankle involved.

The average temperature on admission in these patients was 99.2°F with a mean peripheral white blood cell (WBC) count of 11,900 (range of 4,800 to 33,000). Blood cultures were obtained on admission in 9 patients and were positive in 3. Sedimentation rates were recorded in 11 patients and were found to be elevated in 10 patients, with a range of 28 mm to 140 mm per hour and a mean of 84 mm per hour. Unfortunately, synovial fluid WBC counts were recorded only as "numerous with clumping" on gram stains, and thus no quantification can be reported. Synovial fluid glucose levels were recorded in only 4

patients and found to range from 1 mg% to 47 mg%, with an average of 22 mg%. Synovial fluid gram stains were performed in 18 patients. Eleven of these revealed the presence of microorganisms that were predictive of subsequent culture results in all.

All patients received intravenous antibiotic therapy. Four patients received arthrocentesis alone, the remainder received incision and drainage surgical procedures at variable intervals after admission. Two (9%) of the patients, both of whom had received surgical procedures, died. One, who had chronic hemolytic anemia requiring immunosuppressive therapy, developed acute renal failure and died secondary to gastrointestinal bleeding and hospital-acquired infections. The second, who had rheumatoid arthritis and gram-negative septic arthritis, developed numerous complications including osteomyelitis, gram-negative sepsis, and ischemic bowel with gastrointestinal bleeding. This patient subsequently died of massive pulmonary embolism. The remainder survived hospitalization. Nine of these patients had a poor outcome as evidenced by residual joint dysfunction in 6 and contiguous osteomyelitis in 3, with amputation in 1. Of the 4 patients with gram-negative arthritis who survived hospitalization, 2 developed osteomyelitis requiring amputation and another had residual joint dysfunction at discharge.

The average length of hospital stay was 24 days (including rehabilitation unit stays), with a range of 2 days to 147 days. The time from initial onset of symtoms to diagnosis was quite variable, ranging from 1 day to 6 weeks, with a mean value of 20 days. In 11 patients, the diagnosis of septic arthritis was made 10 days or more after the onset of symptoms. Only 4 of these patients recovered completely. Of the 11 patients diagnosed less than 10 days following the onset of symptoms, 8 had complete recovery.

Table 3. Distribution of Joints Infected

Joint	No. of Patients (%)
Knee (Bilateral involvement in two)	8 (36)
Metatarsophalangeal/ metacarpophalangeal	7 (31.8)
Ankle	4 (18)
Elbow	1 (4.5)
Hip	1 (4.5)
Shoulder	1 (4.5)
Wrist	1 (4.5)
Multiple Joint Involvement	3 (13.6)

*Multiple joint involvement occurred in three patients.

Discussion

Nongonococcal septic arthritis is a significant problem in the geriatric population with 33% of all cases in our studied population occurring in patients over the age of 60 years. This is in agreement with previous studies which reported that approximately 25% to 50% of all cases of nongonoccocal septic arthritis occurred in patients 60 years or older.[1-3]

As in the general adult population, *Staphylococcus aureus* was the predominant pathogen, accounting for 54.5% of all infections.[2,4-6] Also in accordance with previous studies, *S aureus* infections accounted for 60% of infections in patients with rheumatoid arthritis.[1-5,7]

In our elderly population, gram-negative septic arthritis occurred in 22.7%. This incidence is similar to that of 30% reported by McGuire[1] in a previous study of septic arthritis in geriatric patients. It is higher than the 3% to 10% incidence of gram-negative septic arthritis reported in early studies of the general population, although Goldenberg[4] et al and Rosenthal[2] have more recently noted increasing percentages of gram-negative septic arthritis.

Gram-negative septic arthritis has been reported more frequently in patients with histories of chronically debilitating illness, prior arthritis, intravenous drug abuse, and preceding immunosuppressive therapy.[1,4,8,9] In this study, 66% of the patients had a prior history of arthritis, 66% had chronic illness, and 20% had received immunosuppressive therapy. Additionally, 66% had extra-articular infection, and 20% had sustained trauma. All of our patients with gram-negative septic arthritis had more than one risk factor. Thus, the frequent presence of these predisposing factors in our geriatric patients likely influenced the relatively higher incidence of gram-negative septic arthritis. In contrast to previous studies,[1] we feel that empiric antibiotic coverage for gram-negative organisms should be initiated in this age population only in patients with multiple predisposing factors, thus not subjecting some elderly patients to the untoward side-effects of aminoglycoside treatment where it would not be indicated. We documented no cases of septic arthritis secondary to intravenous drug abuse, which we attributed to the lower use of these drugs in the geriatric age group, and the overall lower incidence of drug abuse in our community.

Direct trauma to the joint preceded the develop-

ment of septic arthritis in 27% of the patients. This is a slightly higher incidence of trauma than reported from other studies of the general population. For example, Ang-Fonte reported preceding trauma to the joint in only 18%.[6] McGuire et al reported a history of trauma in only 8.5% of the geriatric patients studied.[1] Of the patients with trauma preceding the development of septic arthritis, half were diabetic. One other patient had renal failure and developed local cellulitis after trauma and subsequent contiguous septic arthritis. Thus, the relatively high incidence of illnesses predisposing to inadvertent trauma, poor wound healing, and impaired resistance to infection may have contributed to the high incidence of trauma as a predisposing factor for septic arthritis in geriatric patients.

Previous studies of septic arthritis in the general public have reported an average duration of symptoms of 12 to 14 days before diagnosis.[2] In this study of geriatric patients, the average time to diagnosis was much longer, averaging 24 days. While the presence of high fever and chills would make one suspect septic arthritis,[1,3] the majority of our geriatric population had a clinically indolent illness. This, in turn, may have influenced the outcome, as evidenced by the frequently poorer outcome in patients diagnosed more than 10 days after the onset of symptoms.

In the conclusion, the results of this study suggest that nongonococcal septic arthritis is a significant problem in the geriatric population, with patients over 60 years of age accounting for 33% of all cases of nongonococal septic arthritis. It is associated with poor outcome in over 50% of patients. Septic arthritis secondary to gram-negative bacilli infection occurs in approximately 23% of patients in this population, with outcome being generally poor. Therefore, in patients with multiple predisposing risk factors, empiric antibiotic treatment should include therapy for gram-negative infection.

This study illustrates how septic arthritis in the elderly may appear deceptively indolent, with minimal temperature elevation and leukocytosis despite the presence of destructive virulent organisms, which can result in significant and previously unreported treatment delays. Finally, geriatric patients who develop septic arthritis have at least one risk factor, and 73% have multiple risk factors for septic arthritis. Consequently, in patients with these risk factors, a high index of clinical suspicion should be maintained to prevent delay in diagnosis and potentially prolonged hospital stays.

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JIM THOMAS

Leaders in Medicine

Leroy Goodman, MD

By Richard Green

Begun in 1981, the Leaders in Medicine series recognizes some of Oklahoma's most outstanding physicians and the contributions they have made to their communities and profession. This is the fourteenth article in the series.

The doctor sits at his desk, reflecting on his past. At 91, he can do a lot of that.

In his small wood-framed house, he is surrounded by the artifacts of his life. The rooms resemble a period piece at the Smithsonian's Museum of American History. It might be titled *A Collector, Mid-Twentieth Century.*

Of course, when he and his wife moved into the house in Yukon in the Thirties, most of the furnishings were new. She probably would have replaced most of them long ago, but she died in 1952. He never married again, so in addition to being one of the state's oldest physicians, he also has been a widower longer than almost anyone else.

After his wife died, the inside of the house changed little. It seemed he always had lived by the aphorism, "If it ain't broke, don't fix it." And he might have tacked on: "Don't replace it, either."

It's a Saturday morning in July, and the heat is starting to rise outside. But a breeze that is fan-aided in two rooms keeps things cool, including the doctor, who is wearing his customary starched white shirt, suit, and tie.

Dr Leroy Goodman is a rather formal man, yet his conversation and manner betray no stuffiness or pretense. For a man who has lived almost a generation longer than his turn-of-the-century peers, Goodman can relate pieces of his story remarkably well. Like many of us, however, there are lengthy gaps unmarked by significant events like the birth of a child or a job change. Sometimes, too, entire eras, such as the Great Depression, are virtually waved away for one reason or another.

Using two canes, Goodman moves about with difficulty, though he never complains or shows the pain he must be feeling. A few years ago, he had total hip replacement surgery. Shortly afterward, he attended the 60th anniversary reunion of his medical school class in Oklahoma City. Leroy said he had a good time, but the evening must have had its melancholy moments. Just three classmates attended. One of them, Dr Hervey Foerster, is the class's unofficial historian. He, Leroy, and Fannie Lou Hayward (nee Brittain) examined their 1927 class picture. Of the class of about 100, only seven were free of the bits of adhesive tape that Hervey had used to scribble the year that each had passed away.

Leroy asked Fannie Lou, a retired allergist, if she remembered that he bought her Model T during their senior year. "Paid less than 500 bucks," he said. The next year he drove that Model T into Yukon for the first time, having no idea that he would settle there for the rest of his life.

Talking about his hip replacement, he said his hospital bill after insurance was $999.99. "Never saw the like," added the man who had rarely raised his fees and always had to be coaxed into it. The doctor's fees were donated — a gesture of respect that meant a great deal to Leroy.

Leroy lifts a large, heavy scrapbook onto his desk, the same desk he used throughout his 57-year practice. His assistant of more than 30 years, Mary Louise Jeffers, comes into the room and hovers over the scrapbook. She removes two pictures and says, "Look at these. This one shows Dr Goodman standing by his office door at 451 West Main. It was taken on his very first day there. This other picture shows him standing by the same door on his last day of practice, December 31, 1985."

Goodman often uses* drifted *as his way of recounting how he accomplished something. It is an accurate verb, but just barely.* Drifted *has a modest "aw, shucks" ring to it but is the single most inappropriate word he uses . . .

Forty-one years in the same location, and think of it: Dr Goodman had already practiced in two other locations in Yukon for 16 years before moving to the Main Street address.

According to Mary Louise, Dr Goodman had resisted retiring in 1985. The year before, he had talked her out of retiring, because he knew he couldn't practice without her. When she announced again that she was quitting, he tried to convince her to postpone

JIM THOMAS

Recalling his first office in Yukon, Leroy Goodman says, "It was upstairs and looked just like Doc Adams' on 'Gunsmoke.' No Miss Kitty, though."

her decision. But this time Mary Louise stood firm.

Why, at the age of 87, did he want to go on practicing? Because he probably had done his best doctoring during the last 20 years, he said. Mary Louise agreed with him. And there was a good reason for it, she said, which would emerge during the next few hours.

* * *

Lexington, Indian Territory, was flourishing when George Leroy Goodman was born there in 1898. Its population periodically eclipsed nearby Purcell's because only in Lexington could a man get a drink legally. As a child, Leroy (George never stuck, for some reason) remembers Purcell residents crossing the South Canadian River bridge (when it wasn't washed out) to sit down and drink a glass or jug of home brew.

Leroy also recalls that "gorgeous passenger trains" stopped in Lexington to take on water and coal and let their well-heeled passengers dine in comfort if not splendor. Some of the gentlemen wore derbies and used walking sticks. These cosmopolitan, courtly people may have been young Leroy's first models of what he aspired to be as an adult.

Certainly his more immediate models — relatives and neighbors — were earthier, less educated, and not well to do; they were mainly homesteaders, like Leroy's parents. His father, Fred Goodman, had been a butcher in Dallas. When his wife died, he moved to the Lexington area to be near his family and away from the painful memories associated with the death of his wife.

Fred married Edna Summers, whose family owned the farm adjacent to the Goodman family's. Edna's brother, Horace Summers, was one of the first graduates of the University of Oklahoma's pharmacy school. As such, he was one of the state's new breed of druggists (as they were known then), in that pharmacy was becoming more scientific.

Horace's academic training and greater emphasis on the scientific side of healing had an early and marked influence on Leroy at a time when flim-flam men peddling bottled elixirs still held sway with the public. Leroy remembers some of the more flamboyant medicine shows in Lexington. Music and clowns would precede these hucksters into town. Once they had everyone's attention, their spellbinding but utterly undocumented perorations began.

The active ingredient in the "cure-all" preparation, Horace explained, was alcohol. If you took enough of it, your pains tended to subside, briefly.

Fred's father, Fred Sr., came to settle in the Lexington area by happenstance. His participation in the Oklahoma Land Run of 1889 had been delayed for some reason. By the time he saddled up for a look-see, many had already staked their claims. According to family lore, he met a farmer who was so dissatisfied that he asked Fred Sr. if he would be interested in his claim. "Sure," allowed Fred. "I'd like to have any farm." So they arranged a swap: Fred's horse for the land.

Leroy's earliest years were spent

on part of that land. Then, as its productivity ebbed, the Goodmans moved to a more fertile location along the South Canadian River. However, there is an obvious risk that comes with good river bottom land, and sooner rather than later, it became apparent. Following strong rains, the river flooded and washed away about 20 acres of crops and good rich topsoil.

The family moved on, in the statehood year of 1907, to an 80-acre spread three miles north of Shawnee. Leroy was 9 then, and his brother, Earnest, was 7; their half brother, Fred III, was a few years older. A year later their sister, Edith, was born. The boys attended the Grove school, run by Mr Munson. He was a resourceful and efficient man, qualities befitting anyone trying to teach 60 or 70 students in eight grade levels in one room.

"Naturally, I hated school," Leroy says. "All boys hated school. I spent a lot of time looking out the window.

"Academics meant little until I enrolled at Shawnee High School and got exposed to some brilliant fellows. Both teachers and students. I began trying to pattern myself after them and learn from them. And they weren't aiming to become farmers, though some came from farm families, like me; they were going to be lawyers and doctors. And so I just sort of drifted that way."

Goodman often uses *drifted* as his way of recounting how he accomplished something. It is an active verb, but just barely. *Drifted* has a modest "aw, shucks" ring to it but is the single most inappropriate word he uses; he was never lazy or indecisive, nor did he ever feel he was in the clutches of some force he couldn't control.

He associated with and emulated those brilliant people, but he didn't feel as if he genuinely belonged because, he says, "I didn't know how to study." And, according to Goodman, it would be many more years before another brilliant fellow, a medical school classmate named Coyne Campbell, showed him how or, more likely, inspired him to become a serious student.

Nevertheless, Leroy's academic plans and those of most of his male classmates were put on hold by a "romantic adventure" in Europe known as World War I. "I was just a smart aleck," Goodman says. Despite the country's massive recruiting effort to go "Over There," joining the army had little to do with patriotism, he says.

The romance was over as soon as his unit landed in France. "They crowded us and the horses in the same train cars, and we traveled off and on for four days. When we got off in this driving rainstorm, we were utterly exhausted. We bedded down in some chicken coops until, sometime in the middle of the night, this sergeant ordered us to move out. It was still raining, and the roads were all mud."

As the artillery noise grew louder, the unit knew it was ap-

Dr Goodman's photo album contains two very similar photos, one taken the day he opened his Main Street office in 1936 and the other (inset) when he closed it in 1985.

A licensed pilot, Dr Goodman enjoyed flying for many years before vision problems grounded him in 1965, five years after this picture was taken.

proaching the front. After several more hours of slogging along, Leroy bought an egg sandwich from a French woman who told him that his unit was headed for certain death.

Her farewell remark might have weighed more on him than the mud and his army pack and rifle. At any rate, when his unit finally stopped, Leroy was asleep before he hit the mud. When he awoke the next day, he was alone.

He went looking for his unit but found another one instead and stayed with them in France for most of 1917. He had been trained in the medical corps as a laboratory technician, and he says he ran thousands of specimens. But he also volunteered as a courier because he was the only one who knew how to fix up and run the unit's Indian motorcycle.

It was good duty; he and a lieutenant, who rode in the sidecar, toured some of France's most scenic countryside. He also discovered a source of income: a big pile of shoes and boots that had never been worn and were starting to mildew. He "liberated" some of the shoes and packed them in the sidecar. Then he sold them for $1 a pair to farmers as he traveled his assigned route.

On the ship home, Leroy ran into a member of his original unit, the one that had vanished during the night. They had been ordered to the front, he said. And they had been wiped out. The French woman had almost been right.

* * *

Leroy returned to the family farm near Shawnee, and if not exactly urbane, certainly was not afraid to relocate. He graduated from Shawnee High School in 1918 and went to work as a medical technologist, first for some local doctors and then in Kansas City, Missouri. One of the doctors, Orville Coffee, took a liking to Leroy and encouraged him to become a physician. Leroy didn't need the encouragement but he did make use of a well-placed reference to get into a good pre-med program.

Coffee was an alum of Ohio State, and he told Leroy that he'd put in a good word for him there. Shortly thereafter Leroy moved to Columbus, took up pre-med, and supported himself with a job secured for him by Dr Coffee. It was at the state insane asylum.

He got his room and board, $25 a month, and some good experience from the asylum. He got practical advice from a Mr Sheets, who advised, "Never turn your back on a patient," and "Always have a trusty with you in the wards," and learned something of value about human nature in general.

"All people want to feel like they're worth something," Goodman says. "In the asylum, too. That meant giving them something worthwhile to do. Many of the patients worked a 160-acre farm. Nowadays you can't have them do that because the courts say you are infringing on their rights." He pauses and adds, "That is crazy."

Leroy was more successful there than at Ohio State. After 19 months of satisfactory undergraduate work, this grandson of a German immigrant flunked German and withdrew. He enrolled at the University of Oklahoma, took French — a language he had almost mastered during his months in France — and easily made an A.

He applied to OU's medical school, was accepted, and began his studies in 1921. On enrollment day, there was a note from the anatomy professor, Dr Essenberg, announcing a test the next day over the first fifteen pages of *Gray's Anatomy*. "I had never even heard of the book, but I found one in the library and studied until 4 AM. Trouble was, I only got through page 7," he says.

Goodman doesn't remember the test, but he has vivid memories of Dr Essenberg's initial appearance

in class. "He walked in very stiff and formal, and with his thick German accent, he announced that 25 percent of the class would flunk out. 'No use wasting taxpayers' money on you,' he said. Some classmates took this message to heart instantly and withdrew. They were the sons of rich men with political pull."

Leroy was not intimidated. He and his good friends Coyne Campbell, later one of Oklahoma's first psychiatrists, and Maurice Gordon immediately saw that the coursework was heavy and the teachers were very demanding and strict. They cooperated on studying and did very well. "Coyne must have had a photographic memory," Goodman notes, "because he rarely had to read a page twice; yet he studied all the time anyway and was first in our class."

Professor Essenberg hired Leroy part-time to do some laboratory work, including embalming. Leroy was able to pay his expenses and usually had some extra money as well.

During his senior year, Leroy was befriended by surgeon Oscar White. "I assisted him and actually did some of the more trivial surgeries while he observed."

Leroy also helped Dr Barker, the county doctor in charge of treating derelicts, prostitutes, pimps, and drug addicts who congregated along Reno Street. At times, he actually ran the county's clinic on Reno and thoroughly enjoyed the experience. He was graduated in 1927 and completed his internship in Oklahoma City, just after the death of one of Yukon's two doctors. The other doctor, Oscar White, was planning to retire soon.

Dr White was covering Yukon until another doctor could be recruited. One day he asked Leroy to go along on his rounds in the little Czech community west of Oklahoma City. "I immediately liked Yukon," Goodman says. "It was a good ways from Oklahoma City. To get there on my first day of practice, I had to take a ferry across the river at Northwest 39th. They were just building the bridge that is still there but was replaced several years back."

Goodman's new office belonged to the late Dr Sanger. "It was upstairs and looked just like Doc Adams' office on 'Gunsmoke.' No Miss Kitty, though."

Instead, Sanger's former assistant was there, working like nothing had ever happened. And Dr Sanger's former patients (now Goodman's patients) came and went all day, too. Most of them, according to Goodman, were "deadbeats." The paying patients went to the other doctor in town.

By deadbeats, Goodman didn't mean poor people, but rather, those who wanted something for nothing. Many of his patients in the years to come would be poor, but even if they couldn't afford $1 for an office visit or $3 for a house call, they paid what they could, be it farm produce or services in kind.

However, during his first two years of practice, Goodman wrote off most of his charges. During the second year, he remembers "pocketing" about $6,000 out of $30,000 to $35,000.

This is, however, only a wild guess. According to his longtime assistant, Mary Louise Jeffers, the doctor "didn't want to know what his losses were. We never kept tabs on charged services; for many, many years, he wouldn't allow me to send out statements."

Fiscal denial notwithstanding,

Dr Goodman cleans his glasses before peering into the microscope. Assistant Mary Louise Jeffers stands by. (Photo copyright 1982, The Oklahoma Publishing Company. From the October 25, 1982 issue of The Oklahoma City Times.*)*

Goodman began joining the civic organizations and making contacts in the community "to cultivate more paying patients." And soon his work began paying off. Among the new patients who "drifted" in were members of top management for the community's number one employer, the Yukon Mills and Grain Co. In time, he was made the mill's company doctor by owner John Kroutil, who was also Goodman's friend and patient.

His bond to the community was sealed in 1932, when he married Marie Mulvey, whose family owned the north half of downtown Yukon, including the building in which Goodman had his office.

When they first met, at a party probably arranged as a matchmaking event, they were not immediately smitten. But as a graduate of OU and a cultured daughter of privilege, Marie had much in her favor, especially in Yukon, Oklahoma. She was pretty and highly intelligent but in a lively, not pompous, way.

Marie had a serious health problem — mitral stenosis. Though she moved about at a measured, sometimes labored, pace and avoided exertion, she was not an invalid. Sometimes, she accompanied her husband on some night calls, particularly deliveries.

There could be no children for the Goodmans, however. For a person who had trouble walking up steps, childbirth was out of the question. Over the years, a few of Goodman's obstetrical patients offered to give him the baby he had just delivered.

"With him, ethics was the name of the game. He always took pride in being a man of honor. Calling him unethical would have been much worse than calling him stupid."

—Jack Enos, MD

Goodman smiles. "I delivered one boy about six blocks from here and the mother said, 'Go on, Doc. Take him home. I've got enough children.' I politely declined."

Goodman delivered about 1,000 babies, mostly home deliveries, before he announced in 1953 that he was quitting obstetrics. A major factor in his decision was Marie's death some months before. Though he had known that Marie probably wouldn't have a long life, and by the early 1950s realized that her condition had deteriorated, Goodman was still stunned when she died. He said Marie never could be replaced by another woman, and she never was.

* * *

Though Goodman initially waves off the Great Depression of the 1930s as "no big deal," he does remember that many buildings downtown were vacant. And he will allow as how some altruistic patients occasionally gave him blank checks to subsidize indigent care.

Goodman also began buying farms and learning how to make them profitable businesses. "It took a while, but I finally saw that the key was to hire farmers with their own land to work my land."

As it turned out, some of Goodman's farmland was located near some profitable oil leases. So he made additional money by leasing some of his land to oil and gas companies. One 80-acre plot in particular ws coveted by the City of Oklahoma City, ostensibly for an airport. After a few years, the offer seemed to have leveled off at $25,000 and Goodman was still refusing. When the city threatened to take him to court, Goodman's attorney, who was well placed in capital-city politics, arranged a compromise offer of $52,000. "When I got that check, I was so impressed that I took a picture of it."

However, Goodman later learned that the 80 acres contained "oil gushers. I heard that somebody made a million bucks on that deal."

The advent of antibiotics in the 1940s improved the practice of medicine, and Goodman was as awed by their therapeutic power as his colleagues. But early on, he learned a valuable lesson in the judicious use of penicillin.

"Following a cerebral hemorrhage, this lady was totally paralyzed and unresponsive," Goodman says. "Her temperature shot up to 104, and I socked her with penicillin. I stayed with her for two days and nights and fought the thing, and eventually the fever broke and she lived. But she never recovered and required constant care. About three years later, her married son sat me down and said, 'Doc, you saved my mother's life, but you nearly ruined the family. You should have let her die.' And I knew he was dead right."

After Marie's death, Goodman spent more time relying on his escape from the pressures of the profession. He started flying in the mid-1940s. "As soon as we locked up for the day, he was off for Eichman Field, where he kept his plane," Mary Louise says. "He enjoyed flying, but as Dr Goodman said, 'There is no telephone in the plane.'"

Sometimes, he'd just circle around Yukon. Or, he and a fishing buddy would fly to Lake Texoma. Goodman has several pictures of himself holding up stringers loaded with bass or hefting monster catfish.

Probably everyone who flies small aircraft for 20 years has had close calls, and Goodman had his share. But that's not why he quit flying in 1965. When he developed a retinal ulcer, he was afraid he would flunk the required flying test and so he called it quits.

By then, he was taking a year-long psychiatry course for GPs that was offered by OU's psychiatric department. The idea, in part, was that if you applied psychiatric and behavioral tenets to your practice, you would deliver more effective patient care. Goodman rode to the weekly sessions with Dr Jack Enos, who established his practice in Yukon in 1951.

"It was an excellent course," Enos says, "but Leroy got so caught up in it that it changed his practice. I mean the way he communicated with patients. He started getting insights the ordinary person wouldn't see. I think he even came to think of himself as a psychiatrist.

"He was always a very conservative practitioner, loath to use new drugs too soon or replace equipment until it was good and worn out. With him, ethics was the name of the game. He always took pride in being a man of honor. Calling him unethical would have

JIM THOMAS

Mary Louise Jeffers, Dr Goodman's assistant for thirty years, joins him in recounting highlights of a small-town medical practice.

been much worse than calling him stupid."

Being his assistant for more than 30 years, Mary Louise was even more aware of the course's influence, not only on Leroy's practice but also his temperment. "Dr Goodman used to have a pretty hot temper. It would flare up quickly and dissipate quickly. It never bothered me, but sometimes the patients took these occasional flareups the wrong way."

JIM THOMAS

Leroy Goodman holds a favorite walking stick as he talks about his life in Yukon.

After he started the course, she says, he was much more in control and began expressing his fundamental compassion, gentleness, and understanding more often. "He always had been great with children. Some mothers said they'd never seen the like; nobody could get through to their kids the way he could."

His patient load, Mary Louise says, increased through the 1970s and into the Eighties. While most of his contemporaries were either retired or dead, Goodman was hiring more help for himself and Mary Louise.

But physically, he wasn't up to a demanding practice, and in 1985, after Mary Louise announced her unalterable plans to retire, Goodman did so as well.

December 31, 1985. Besides the patients who had appointments that day, dozens of others, representing four generations, stopped by to wish Leroy Goodman well. He has snapshots of most of them taken with him.

At his desk, he sifts through the photos with Mary Louise, and the doctor has something nice or not nice to say about most of them. Mary Louise remembers reminiscing that day four years ago with a longtime patient of Goodman's.

"One of Dr Goodman's diversions was poker, and years ago, when he had more time, some of his old friends would come around occasionally, late in the afternoon, and they'd all play poker in the X-ray room.

"Dr Goodman thought few of his patients knew about this but actually most of them probably did. Anyway, this patient I've been talking about called one afternoon and said she had to come by and see him. Well, I said he wasn't available or something like that and she said, 'Now just a minute, Mary Louise, I know very well that he's back there playing poker with his cronies and tell him I'll be there in five minutes.' And she was.

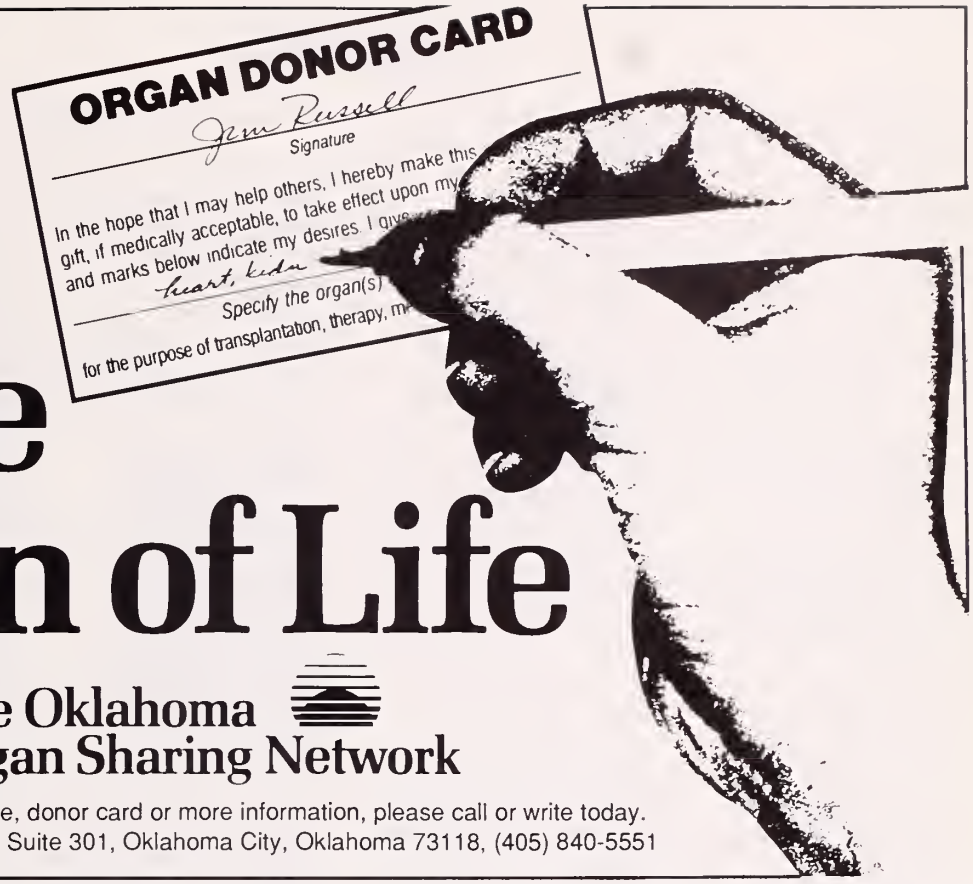
"I don't know why I like to tell that story so much. Maybe because, by today's standards, it's so quaint."

Richard Green is an experienced medical writer and former editor of Vital Signs, *magazine of the University of Oklahoma Health Sciences Center (OUHSC) and OU College of Medicine Alumni Association.*

Jim Thomas is a staff photographer at OUHSC. His work has been featured in a number of OUHSC publications.

Coming next month

Currently scheduled for publication next month are a case report on a complication of intravenous catheterization, a study on the uptake of trimethoprim and metronidazole in the seminal vesicle, and a report on the use of high-voltage direct current electric shock in the treatment of spider bite.



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Annual Meeting headliner

OSMA books Jeanne Robertson for return engagement in May

Jeanne Robertson, one of the funniest and most popular professional speakers in America today, will be the featured entertainer at the 1990 Annual Meeting of the Oklahoma State Medical Association (OSMA).
The meeting will be held May 3-5 at the Marriott Hotel in Oklahoma City.

Jeanne Robertson

Ms Robertson will be remembered by many as the speaker who left them laughing at the OSMA's 1983 Annual Meeting in Tulsa. She is expected to do the same at next year's meeting, where she will appear at the Presidential Inaugural Banquet on Friday, May 4.

Six feet two inches tall, the former Miss North Carolina developed her sense of humor at an early age. "It is so necessary that we learn to laugh at ourselves," she says. "I had a choice. I could accept my height and other things about myself that could not be changed, and learn to live with them and laugh at them. Or, I could go around in flat shoes, stoop shouldered, and try to pretend I was five-foot-fourteen."

To date, Jeanne Robertson is the tallest contestant to ever compete in the Miss America Pageant, which makes her, as she puts it, "also the tallest contestant to ever *lose* in the Miss America Pageant." Her year as Miss North Carolina, however, gave her a strong start in public speaking and taught her that laughter was a valuable commodity.

She became a full-time professional humorist in 1976 and has been in great demand ever since. A member of the National Speakers Association (NSA), she makes some 130 appearances a year. She served as president of the NSA in 1985-86 and has received that group's CPAE Award for speaking excellence as well as its Cavett Award for her accomplishments, integrity, and reputation. QUOTE Magazine named her one of the "Ten Most Quotable Humorists in America" in 1984, along with such notables as Johnny Carson, Mark Russell, Lewis Grizzard, and Erma Bombeck.

All things considered, it is likely that Jeanne Robertson, "biggest loser" in the Miss American Pageant, will be a big hit, again, at OSMA's 1990 Annual Meeting.

Formal policies needed

Hospitals need to ask patients about living wills, says study

Most hospitals do not routinely ask patients if they have prepared living wills or other "advance directives," says a report in the November 3 *Journal of the American Medical Association (JAMA)*.

Questions regarding "advance directives" — either living wills or durable powers of attorney — should be a routine part of the hospital admissions process so that physicians are made aware of a patient's preferences early in treatment, conclude S. Van McCrary, JD, MPH, of the University of Texas Medical Branch at Galveston, and Jeffrey R. Botkin, MD, MPH, of Case Western Reserve University School of Medicine, Cleveland, Ohio.

The authors found that 67% of the 219 hospitals they surveyed had formal policies concerning such documents. They suggest that the figure should be higher because a growing proportion of the population has prepared some written statement of their wishes regarding life-sustaining treatment.

"The broad legal sanction for advance directives and their use by a growing proportion of the population requires that physicians and hospitals be familiar with these documents," they write. "Physicians need to understand the legal and ethical issues related to advance directives, and hospitals should have clear policies in place to foster appropriate

Living wills *(continued)*

decision making in response to these instruments."

The authors define "advance directives" as both living wills — documents executed by healthy patients expressing their treatment preferences if they should become incapacitated — and durable powers of attorney. The latter allow patients to name a decision-maker to implement their choices.

At the time of the survey, 38 states and the District of Columbia had enacted some type of living will, durable power of attorney, or "natural death" legislation. Hospitals in areas with natural death acts were more likely to have formal policies, suggesting that the statutes have led to increased discussion about decisions to forego life-sustaining support, the authors say.

The authors warn that "the true proportion of hospitals that have a formal policy on advance directives may be even lower than reported" since larger hospitals, which are more likely to have formalized policies, were significantly overrepresented in the study. More disturbing, they say, is their finding that 43% of existing policies were reviewed by hospital ethics committees. "Clearly, many ethics committees are not actively participating in hospital policy formulation on this issue," the authors conclude.

The great majority of institutions with formal policies still require patients to notify the hospital, rather than making the subject a routine inquiry at the time of admission, the authors say. Only 4% of those institutions with policies actively ask patients if they have a living will or similar document. Placing the responsibility for notification on a patient has serious disadvantages because a physician may be unaware of the directive in critical situations, they say.

The authors argue for a formal policy that routinely asks all adult patients at admission if they have a living will or similar document. "Adding a few questions to the admission checklist is only a slight burden on hospital procedure," they write. "We believe this burden is disproportionately outweighed by the benefits if only a few difficult cases are thereby prevented."

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Bicycle helmets offer protection but use among children is low

A community-wide bicycle helmet campaign can significantly increase helmet use among children, says a report in the October 27 *Journal of the American Medical Association (JAMA)*.

The report, by Carolyn G. DiGuiseppi, MD, MPH, of the George Washington University School of Medicine and Health Services, Washington, DC, and colleagues, found that helmet use by children increased from 5.5% to 15.7% in Seattle, Wash., following a 16-month public information campaign promoting the use of bicycle helmets to reduce injury. Another recent study conducted in Seattle found helmets could reduce the risk of head injury by 85%.

According to the authors, bicycling accidents account for over 300,000 visits to the emergency room by children each year and 500 to 600 deaths. Despite the apparent protection offered by the use of bicycling helmets, fewer than 5% of children nationwide use them, according to the report.

Motor vehicles, firearms, falls cause most head-injury deaths

Head injury accounted for more than 315,000 deaths in the United States from 1979 to 1986, according to a report in the October 27 *Journal of the American Medical Association (JAMA)*.

The report, by Daniel M. Sosin, MD, of the Division of Injury Epidemiology and Control, Centers for Disease Control, Atlanta, and colleagues, found that head injury–associated deaths represented a death rate of 16.9 per 100,000 residents. Accidents from motor vehicles (57%), firearms (14%), and falls (12%) were the most frequent causes. Death rates peaked at 15 to 24 years of age and at 75 years or older. Youngsters were most often the victims of motor vehicle accidents (77%) while persons 75 years or older were most affected by falls (43%). The rate of head injury–associated deaths for males was three time that of females.

"Physicians can play an important role in primary prevention of head injury through careful prescribing of medications, patient counseling, and advocacy of proved interventions such as motor vehicle–occupant restraints," conclude the authors.

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Answers complex and costly

Public and private sector efforts needed to cover the uninsured

Expanding the Medicaid program to cover the more than 10.9 million uninsured persons whose incomes fall below the federal poverty line may cost as much as $29.5 billion, according to a report in the October 20 *Journal of the American Medical Association (JAMA)*.

Furthermore, the decisions made by the employed poor will have a significant impact on Medicaid enrollment and its cost to the public sector, say the authors, Kenneth E. Thorpe, PhD, and Joanna E. Siegel, RN, SM, of the Department of Health Policy and Management, Harvard University School of Public Health, Boston.

According to the authors, several different scenarios are likely to result from Medicaid expansion. Workers without private health insurance whose incomes are just above the poverty level may decide to work fewer hours to further reduce income, thereby qualifying for Medicaid coverage. Employers who insure employees with income below the poverty line may drop their insurance policies altogether in favor of Medicaid coverage. Individuals covered by expensive, nongroup insurance plans will also have an incentive to drop their coverage and enroll in an expanded Medicaid program.

A current proposal in Congress which, if enacted, would require all employers to provide health insurance to full-time employees and their dependents "would accomplish a major reduction in the size of the uninsured population," but "its impact on the private sector would be substantial," the authors say. Increased insurance costs could result in the loss of 60,000 to 100,000 jobs and an estimated $33 billion rise in insurance premiums. Such an employer mandate would still leave more than 12 million nonelderly persons uninsured and in poverty, say the authors.

(continued)

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Public Health Aspects of Hepatitis A

Prevention of the spread of communicable diseases has the best chance of being effective when persons who are exposed are identified in a prompt fashion.

Recent experiences involving cases of hepatitis A have underscored the need to identify those cases who, by virtue of their occupation, may serve as a potential source of an outbreak.

Occupational history is important in the overall evaluation of the patient, but takes on additional importance when one considers the possible health effects of a food handler or day-care center worker with hepatitis A. In the case of a food handler, early intervention may avert additional exposures and allow the early identification of a potential outbreak situation. Identification of hepatitis A in a day-care center worker may be the sentinel case indicative of an outbreak of hepatitis A in a day-care facility.

Hepatitis A is of special public health interest due to its fecal-oral route of transmission. Since hepatitis A virus is shed in an infected person's stool for up to two weeks prior to symptoms, good personal hygiene is the primary prevention measure.

Oklahoma has 300 to 500 reported cases of hepatitis A each year, about 40 of which are food handlers. Nine public announcements have been made to date in 1989. Four criteria are considered in determining whether an announcement recommending immune globulin (Ig) to restaurant patrons is needed. These include: *(1) Positive HAV-IgM of the food handler.* This laboratory result indicates recent infection with hepatitis A. When an announcement is being considered, laboratory confirmation is required. *(2) Worker handled high-risk foods.* High-risk foods are those not cooked after handling, especially those which might be wet or involve extensive handling, such as salads or cold sandwiches. *(3) Worker had inadequate hygiene.* A face-to-face interview is conducted to assess cleanliness and to inquire about hand washing habits. In cases where the worker continued to work after they began having diarrhea, adequate hygiene is considered unlikely regardless of the person's hand washing practices. *(4) Persons exposed receive Ig within two weeks of their exposure.* Ig is 80% to 90% effective in preventing hepatitis A if received within 14 days of the exposure. Ig received after that time period has little effect.

Physicians who suspect hepatitis A in their food handler patients can aid our efforts to protect public health by having their laboratory run the HAV-IgM as quickly as possible and by reporting the suspected case by telephone to the Oklahoma State Department of Health, (405) 271-4060, seven days a week, 24 hours a day, for prompt follow-up.

Uninsured *(continued)*

Allowing the "near poor" — individuals who are impoverished but who do not meet income eligibility for Medicaid — to buy in to the Medicaid program offers some solutions to covering the uninsured. This would provide coverage to 11.1 million uninsured and 5.1 million nongroup policyholders, say the authors. They estimate the cost of covering these individuals would approach $18.4 billion, depending on participation rates and the amount of public subsidization.

"At issue . . . is the appropriate assignment of costs between the public and private sectors of providing basic health coverage to the uninsured poor," the authors write. They advocate expanding the Medicaid program in combination with both mandated employer coverage and a buy-in provision. "This combination of strategies would draw on public and private resources, providing coverage both on the basis of employment and on the basis of income," they conclude.

DEATHS

Rheba L. Huff Edwards, MD
1903 - 1989

Retired psychiatrist Rheba Edwards, MD, of Norman, died September 30, 1989. Dr Edwards was born in Gage, Oklahoma Territory, in 1903 and graduated from the University of Oklahoma School of Medicine in 1938. She practiced internal medicine in the Oklahoma City area until 1953, when she took a residency in psychiatry at Central State Griffin Memorial Hospital. She stayed with the Oklahoma State Mental Health System, serving in several capacities until her retirement in June 1985.

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Too much sun?

Study finds marked increase in two categories of skin cancer

A marked increase in the incidence of squamous cell skin cancer and malignant melanoma over a period of 27 years may signal an emerging epidemic of the diseases, especially in fair-skinned people, says a report in the October 20 *Journal of the American Medical Assocation (JAMA)*.

In a study focusing on 2,453 cases of invasive skin cancers reported from 1960 to 1987 to the tumor registry of the Kaiser Permanente prepaid health insurance program in Portland, Ore.–Vancouver, Wash., researchers noted that the incidence of squamous cell skin cancer increased 2.6 times in men and 3.1 times in women while the incidence of malignant melanoma rose 3.5-fold and 4.6-fold in men and women, respectively.

The changes reiterate the need for education concerning the hazards of overexposure to the sun, conclude the authors, Andrew G. Glass, MD, of the Center for Health Research, Kaiser Permanente, Portland, and Robert N. Hoover, MD, ScD, of the Environmental Epidemiology Branch, National Cancer Institute, Bethesda, Md.

"Both malignancies are considerably more common in this population than we expected based on

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Wayman Jackson Thompson, MD	September 20
Rheba L. Huff Edwards, MD	September 30
George Harry Garrison, MD	October 5

REACTION TIME

Choctaw physician calls medical advertising today "deplorable"

To the Editor: Your editorial ["How's Business, Doc?"] in the September issue of the OSMA *Journal* was very good and I agree wholeheartedly.

The present-day advertising of physicians, clinics, hospitals, etc., is deplorable, in my opinion. The current fee schedules are ridiculous and the fact that rural hospitals, in most instances, must accept a lower fee than the urban hospitals is also ridiculous. I am sure, in most instances, it is necessary to pay nurses, medical technologists, and other medical personnel more in the rural areas than in the metropolitan areas.

The big government "at any cost" is bankrupting the United States. Yet, when you write or talk to your Congressional representatives, whether local, state or federal, there is always a multitude of excuses and explanations why they need this, that, or the other.

Incidentally, the current directory from the Board of Medical Examiners regarding the "MD" vs "MD (Ret.)" is ridiculous in my opinion. The MD is a degree earned and not a status symbol. It is doubtful that it would stand up legally.

—*Wiley T. McCollum, MD*
Choctaw

Skin cancer *(continued)*

previous reports from the general population," the authors say. "These observations are consistent with the impression that the rising incidence of both malignancies may be attributable to increased voluntary exposure to the sun over an extended period."

The study represents the first systematic reporting over time of squamous cell skin cancer, a cancer that can appear as either an open sore or hard-surfaced lump anywhere on the body. Malignant melanoma, the incidence of which has been widely studied in the past, is signaled typically by a change in an existing mole or the appearance of a new one anywhere on the body.

The researchers concluded that the incidence of squamous cell cancer rose with advancing age, particularly after age 40, in both men and women while the incidence of melanoma increased sharply during adolescence and early adulthood but rose at a much slower rate thereafter.

Both melanoma and squamous cell skin cancers of the head and neck or the extremities rose at parallel rates for both men and women over the study period. However, melanoma of the trunk increased at a much sharper rate in both sexes. The rate of melanoma of the trunk for women increased from 0.5 to 4.5 per 100,000 while the rate for squamous cell cancer of the trunk rose from 0.7 to 1.3. In men, the rate of melanoma of the trunk changed from 0.8 to 9.3 per 100,000 while the rate for squamous cell cancer rose from 1.3 to 5.6 per 100,000.

The disproportionate increase in melanomas of the trunk may be due to changes in patterns of recreational exposure to the sun rather than chronic, long-term sun exposure over time, the authors say. The upward trend in both skin cancers across all age groups may be related to greater outdoor activity and wearing clothing offering little protection from the sun's effects, they say.

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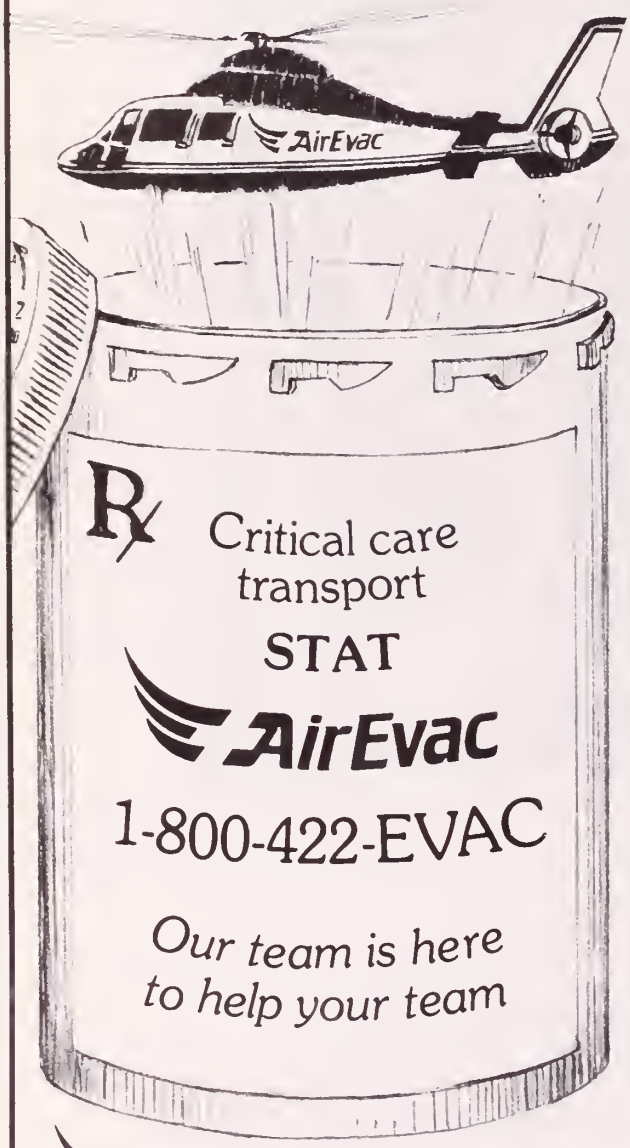

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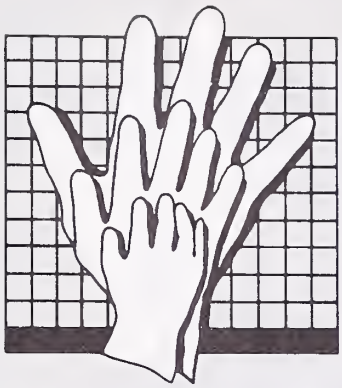

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INSTRUCTIONS FOR AUTHORS

Contributions

Articles submitted for publication, including Annual Meeting papers, become the sole property of the JOURNAL and must not have been published elsewhere. The Editorial Board reserves the right to edit any material submitted. Manuscripts must be typewritten, double-spaced, and submitted in duplicate. Receipt of manuscripts will be acknowledged, and unpublished manuscripts will be returned. The JOURNAL does not assume responsibility for the statements or opinions of any contributor.

Style

All manuscripts should adhere to the style adopted by the American Medical Association as illustrated in *JAMA* and detailed in the AMA's *Manual of Style*. Footnotes, bibliographies, and legends for illustrations should be typewritten, double-spaced, on separate sheets. References are to be listed in the order of their appearance in the article.

Illustrations

Illustrations other than the author's will not be accepted for publication unless accompanied by written permission from the original source. Illustrations should be labeled with the author's name and must be numbered in the order in which they are referred to in the article. The quality of all illustrations must be in keeping with the quality of the magazine.

News

Readers are encouraged to submit news items of interest to Oklahoma physicians. Where dates of meetings, etc, are important, please remember that each issue closes on the first day of the *preceding* month and reaches subscribers in the latter half of the month of publication.

Reprints

Authors will receive reprint order forms from the Transcript Press, 222 East Eufaula, Norman, Oklahoma 73069, prior to publication of their articles. Other requests for reprints must be made to the Transcript Press within 30 days after publication.

Back Issues

Microfilm copies of back issues of the JOURNAL can be purchased from University Microfilms International, 300 North Zeeb Road, Ann Arbor, Michigan 48106.

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■ **Two recent Oklahoma State Medical Association** (OSMA) management seminars are now available on audio cassette tapes. The first, "Protecting Your Assets," is a guide to the protection of family assets in the event of a lawsuit. The second, entitled "Managing the Medical Office," deals with the business and legal aspects of operating a physician's office. The tapes can be ordered from the OSMA for $25 and $37.50, respectively, plus $2.50 each for shipping and handling.

■ **Locations for next month's HIV pre- and post-**test counseling training, sponsored by the Oklahoma State Medical Association, have been announced. The Oklahoma City session, January 16-18, will be at Rose State College, Tom Steed Center, 6420 SE 15. The Tulsa session, January 23-25, will be at the University of Oklahoma Medical Library, 6310 E. 30th. Meetings will run from 9AM to 4PM each day. For additional information, contact Claudia Kamas at the OSMA, (405) 843-9571 or 1-800-522-9452.

■ **Physicians who have purchased professional** liability coverage from either the Medical Liability Purchasing Group, Inc., (MLPG) of Indiana or the Casualty Assurance Risk Insurance Brokerage Company (CARIB) are advised that neither company is licensed to sell insurance in Oklahoma. Amid allegations that it has made false and misleading claims in its mail solicitations, MLPG has been ordered by the United States District Court to immediately cease doing business. Policies sold by MLPG were issued by CARIB, which is incorporated in Guam and not admitted as an insuror in the US. Any Oklahoma physician who has purchased coverage from these companies should contact the Financial and Examination Division of the Oklahoma State Insurance Department, (405) 521-3966 or 1-800-522-0071.

■ **William B. Moran, Jr., MD, Oklahoma City,** was recently named chairman-elect of the Board of Governors of the American Academy of Otolaryngology–Head and Neck Surgery. Dr Moran was elected at the board's annual meeting in September. The board assures input from local, state, and national organizations by involving practitioners on academic, social, economic, and political issues and makes recommendations regarding the programs and policies of the academy.

■ **The Pennsylvania Medical Society's House of** Delegates voted last month to establish unified membership with the American Medical Association (AMA) in 1990. Pennsylvania thus becomes the eighth and largest state to adopt unified county-state-AMA membership. The unification proposal was approved by a decisive 74% plurality that included the solid support of the society's leaders and unanimous backing from its student, resident, and young physicians' sections. Pennsylvania, reporting a membership of 18,300, surpasses Illinois, previously the largest unified state with 17,800 members. The other unified states are Oklahoma (4,300 members), Kansas, Mississippi, Delaware, Montana, and Virginia.

■ **Roger A. Brumback, MD, associate professor** of pathology at the University of Oklahoma Health Sciences Center in Oklahoma City, was elected secretary-treasurer of the Society for Experimental Neural Pathology during the group's recent annual meeting in New Orleans. The society is a satellite organization of the American Neurological Association. Dr Brumback, who will serve a four-year term, was one of the cofounders of the society two years ago. He has been acting secretary-treasurer of the 150-member group since that time.

■ **Oklahoma City internist M. Boyd Shook, MD,** has been re-elected to the Board of Trustees of the American Society of Internal Medicine (ASIM). Dr Shook was first elected to the board in 1987. He is president of the Oklahoma County Medical Society and past president of the Oklahoma Society of Clinical Oncology, the Oklahoma Society of Internal Medicine, the Oklahoma Foundation for Peer Review, and the Physicians' Medical Plan of Oklahoma. He has been a clinical assistant professor of medicine at the University of Oklahoma for 11 years.

■ **The Board of Trustees of the Oklahoma State** Medical Association (OSMA) is seeking nominations for the 1990 Donald J. Blair Friend of Medicine, A.H. Robins, and Mark R. Johnson Practitioner of the Year awards. Nominations should be directed to the Board of Trustees or OSMA executive offices, 601 Northwest Expressway, Oklahoma City, OK 73118. Winners will be selected at the board's February meeting and announced at the Annual Meeting next May.

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ntraindications: VASOTEC® (Enalapril Maleate, MSO) is contraindicated in patients who are hypersensitive to this oduct and in patients with a history of angioedema related to previous treatment with an ACE inhibitor.

arnings: *Angioedema:* Angioedema of the face, extremities, lips, tongue, glottis, and/or larynx has been reported in ients treated with ACE inhibitors, including VASOTEC. In such cases, VASOTEC should be promptly discontinued and the ient carefully observed until the swelling disappears. In instances where swelling has been confined to the face and lips, condition has generally resolved without treatment, although antihistamines have been useful in relieving symptoms. gioedema associated with laryngeal edema may be fatal. **Where there is involvement of the tongue, glottis, or ynx likely to cause airway obstruction, appropriate therapy, e.g., subcutaneous epinephrine solution 000 (0.3 mL to 0.5 mL), should be promptly administered.** (See ADVERSE REACTIONS.)

potension: Excessive hypotension is rare in uncomplicated hypertensive patients treated with VASOTEC alone. Heart ure patients given VASOTEC commonly have some reduction in blood pressure, especially with the first dose, but continuation of therapy for continuing symptomatic hypotension usually is not necessary when dosing instructions followed; caution should be observed when initiating therapy (See DOSAGE ANO AOMINISTRATION.) Patients at k for excessive hypotension, sometimes associated with oliguria and/or progressive azotemia and rarely with acute al failure and/or death, include those with the following conditions or characteristics: heart failure, hyponatremia, h-dose diuretic therapy, recent intensive diuresis or increase in diuretic dose, renal dialysis, or severe volume and/or l depletion of any etiology. It may be advisable to eliminate the diuretic (except in heart failure patients), reduce the retic dose, or increase salt intake cautiously before initiating therapy with VASOTEC in patients at risk for excessive potension who are able to tolerate such adjustments. (See PRECAUTIONS, *Drug Interactions* and AOVERSE REAC-ONS.) In patients at risk for excessive hypotension, therapy should be started under very close medical supervision d such patients should be followed closely for the first two weeks of treatment and whenever the dose of enalapril d/or diuretic is increased. Similar considerations may apply to patients with ischemic heart disease or cardiovascular ease in whom an excessive fall in blood pressure could result in a myocardial infarction or cerebrovascular accident. xcessive hypotension occurs, the patient should be placed in supine position and, if necessary, receive an intrave-us infusion of normal saline. A transient hypotensive response is not a contraindication to further doses of VASOTEC, ich usually can be given without difficulty once the blood pressure has stabilized. If symptomatic hypotension velops, a dose reduction or discontinuation of VASOTEC or concomitant diuretic may be necessary.

utropenia/Agranulocytosis: Another ACE inhibitor, captopril, has been shown to cause agranulocytosis and bone mar-v depression, rarely in uncomplicated patients but more frequently in patients with renal impairment, especially if they o have a collagen vascular disease. Available data from clinical trials of enalapril are insufficient to show that enalapril es not cause agranulocytosis at similar rates. Foreign marketing experience has revealed several cases of neutropenia granulocytosis in which a causal relationship to enalapril cannot be excluded. Periodic monitoring of white blood cell unts in patients with collagen vascular disease and renal disease should be considered.

ecautions: *General: Impaired Renal Function:* As a consequence of inhibiting the renin-angiotensin-aldosterone stem, changes in renal function may be anticipated in susceptible individuals. In patients with severe heart failure ose renal function may depend on the activity of the renin-angiotensin-aldosterone system, treatment with ACE ibitors, including VASOTEC, may be associated with oliguria and/or progressive azotemia and rarely with acute renal ure and/or death.

clinical studies in hypertensive patients with unilateral or bilateral renal artery stenosis, increases in blood urea ogen and serum creatinine were observed in 20% of patients. These increases were almost always reversible upon continuation of enalapril and/or diuretic therapy. In such patients, renal function should be monitored during the first weeks of therapy.

me patients with hypertension or heart failure with no apparent preexisting renal vascular disease have developed reases in blood urea and serum creatinine, usually minor and transient, especially when VASOTEC has been given comitantly with a diuretic. This is more likely to occur in patients with preexisting renal impairment. Dosage reduc-n and/or discontinuation of the diuretic and/or VASOTEC may be required.

aluation of patients with hypertension or heart failure should always include assessment of renal nction. (See DOSAGE ANO AOMINISTRATION.)

perkalemia: Elevated serum potassium (> 5.7 mEq/L) was observed in approximately 1% of hypertensive patients in ical trials. In most cases these were isolated values which resolved despite continued therapy. Hyperkalemia was a se of discontinuation of therapy in 0.28% of hypertensive patients. In clinical trials in heart failure, hyperkalemia was served in 3.8% of patients, but was not a cause for discontinuation.

k factors for the development of hyperkalemia include renal insufficiency, diabetes mellitus, and the concomitant use potassium-sparing diuretics, potassium supplements, and/or potassium-containing salt substitutes, which should used cautiously, if at all, with VASOTEC. (See *Drug Interactions.*)

rgery/Anesthesia: In patients undergoing major surgery or during anesthesia with agents that produce hypotension, alapril may block angiotensin II formation secondary to compensatory renin release. If hypotension occurs and is nsidered to be due to this mechanism, it can be corrected by volume expansion.

rmation for Patients:

gioedema: Angioedema, including laryngeal edema, may occur especially following the first dose of enalapril. ients should be so advised and told to report immediately any signs or symptoms suggesting angioedema (swelling ace, extremities, eyes, lips, tongue, difficulty in swallowing or breathing) and to take no more drug until they have nsulted with the prescribing physician.

potension: Patients should be cautioned to report lightheadedness especially during the first few days of therapy. If ual syncope occurs, the patients should be told to discontinue the drug until they have consulted with the prescribing ysician.

patients should be cautioned that excessive perspiration and dehydration may lead to an excessive fall in blood ssure because of reduction in fluid volume. Other causes of volume depletion such as vomiting or diarrhea may also d to a fall in blood pressure; patients should be advised to consult with the physician.

perkalemia: Patients should be told not to use salt substitutes containing potassium without consulting their ysician.

utropenia: Patients should be told to report promptly any indication of infection (e.g., sore throat, fever) which may be gn of neutropenia.

TE: As with many other drugs, certain advice to patients being treated with enalapril is warranted. This information is ended to aid in the safe and effective use of this medication. It is not a disclosure of all possible adverse or intended cts.

g Interactions:

potension: Patients on Diuretic Therapy: Patients on diuretics and especially those in whom diuretic therapy was ently instituted may occasionally experience an excessive reduction of blood pressure after initiation of therapy with lapril. The possibility of hypotensive effects with enalapril can be minimized by either discontinuing the diuretic or reasing the salt intake prior to initiation of treatment with enalapril. If it is necessary to continue the diuretic, provide se medical supervision after the initial dose for at least two hours and until blood pressure has stabilized for at least an litional hour. (See WARNINGS and DOSAGE AND ADMINISTRATION.)

ents Causing Renin Release: The antihypertensive effect of VASOTEC is augmented by antihypertensive agents that se renin release (e.g., diuretics).

er Cardiovascular Agents: VASOTEC has been used concomitantly with beta-adrenergic-blocking agents, methyl-pa, nitrates, calcium-blocking agents, hydralazine, prazosin, and digoxin without evidence of clinically significant erse interactions.

ents Increasing Serum Potassium: VASOTEC attenuates potassium loss caused by thiazide-type diuretics. Potas-m-sparing diuretics (e.g., spironolactone, triamterene, or amiloride), potassium supplements, or potassium-con-ning salt substitutes may lead to significant increases in serum potassium. Therefore, if concomitant use of these nts is indicated because of demonstrated hypokalemia, they should be used with caution and with frequent monitor-of serum potassium. Potassium-sparing agents should generally not be used in patients with heart failure receiving SOTEC.

ium: A few cases of lithium toxicity have been reported in patients receiving concomitant VASOTEC and lithium and e reversible upon discontinuation of both drugs. Although a causal relationship has not been established, it is recom-nded that caution be exercised when lithium is used concomitantly with VASOTEC and serum lithium levels should be nitored frequently.

gnancy—Category C: There was no fetotoxicity or teratogenicity in rats treated with up to 200 mg/kg/day of enalapril 3 times the maximum human dose). Fetotoxicity, expressed as a decrease in average fetal weight, occurred in rats en 1200 mg/kg/day of enalapril but did not occur when these animals were supplemented with saline. Enalapril was teratogenic in rabbits. However, maternal and fetal toxicity occurred in some rabbits at doses of 1 mg/kg/day or re. Saline supplementation prevented the maternal and fetal toxicity seen at doses of 3 and 10 mg/kg/day, but not at mg/kg/day (50 times the maximum human dose).

Radioactivity was found to cross the placenta following administration of labeled enalaprilat to pregnant hamsters.

There are no adequate and well-controlled studies of enalapril in pregnant women. However, data are available that show enalapril crosses the human placenta. Because the risk of fetal toxicity with the use of ACE inhibitors has not been clearly defined, VASOTEC® (Enalapril Maleate, MSO) should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Postmarketing experience with all ACE inhibitors thus far suggests the following with regard to pregnancy outcome. Inadvertent exposure limited to the first trimester of pregnancy has not been reported to affect fetal outcome adversely. Fetal exposure during the second and third trimesters of pregnancy has been associated with fetal and neonatal morbidity and mortality.

When ACE inhibitors are used during the later stages of pregnancy, there have been reports of hypotension and decreased renal perfusion in the newborn. Oligohydramnios in the mother has also been reported, presumably representing decreased renal function in the fetus. Infants exposed *in utero* to ACE inhibitors should be closely observed for hypotension, oliguria, and hyperkalemia. If oliguria occurs, attention should be directed toward support of blood pressure and renal perfusion with the administration of fluids and pressors as appropriate. Problems associated with prematurity such as patent ductus arteriosus have occurred in association with maternal use of ACE inhibitors, but it is not clear whether they are related to ACE inhibition, maternal hypertension, or the underlying prematurity.

Nursing Mothers: Milk in lactating rats contains radioactivity following administration of ^{14}C enalapril maleate. It is not known whether this drug is secreted in human milk. Because many drugs are secreted in human milk, caution should be exercised when VASOTEC is given to a nursing mother.

Pediatric Use: Safety and effectiveness in children have not been established.

Adverse Reactions: VASOTEC has been evaluated for safety in more than 10,000 patients, including over 1000 patients treated for one year or more. VASOTEC has been found to be generally well tolerated in controlled clinical trials involving 2987 patients.

HYPERTENSION: The most frequent clinical adverse experiences in controlled trials were: headache (5.2%), dizziness (4.3%), and fatigue (3%).

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in controlled clinical trials were: diarrhea (1.4%), nausea (1.4%), rash (1.4%), cough (1.3%), orthostatic effects (1.2%), and asthenia (1.1%).

HEART FAILURE: The most frequent clinical adverse experiences in both controlled and uncontrolled trials were: dizziness (7.9%), hypotension (6.7%), orthostatic effects (2.2%), syncope (2.2%), cough (2.2%), chest pain (2.1%), and diarrhea (2.1%).

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in both controlled and uncontrolled clinical trials were: fatigue (1.8%), headache (1.8%), abdominal pain (1.6%), asthenia (1.6%), orthostatic hypotension (1.6%), vertigo (1.6%), angina pectoris (1.5%), nausea (1.3%), vomiting (1.3%), bronchitis (1.3%), dyspnea (1.3%), urinary tract infection (1.3%), rash (1.3%), and myocardial infarction (1.2%).

Other serious clinical adverse experiences occurring since the drug was marketed or adverse experiences occurring in 0.5% to 1% of patients with hypertension or heart failure in clinical trials in order of decreasing severity within each category:

Cardiovascular: Cardiac arrest; myocardial infarction or cerebrovascular accident, possibly secondary to excessive hypotension in high-risk patients (see WARNINGS, *Hypotension*); cardiac arrest; pulmonary embolism and infarction; rhythm disturbances; atrial fibrillation, palpitation.

Digestive: Ileus, pancreatitis, hepatitis or cholestatic jaundice, melena, anorexia, dyspepsia, constipation, glossitis.

Nervous/Psychiatric: Oepression, confusion, ataxia, somnolence, insomnia, nervousness, paresthesia.

Urogenital: Renal failure, oliguria, renal dysfunction (see PRECAUTIONS and OOSAGE ANO ADMINISTRATION).

Respiratory: Bronchospasm, rhinorrhea, asthma, upper respiratory infection.

Skin: Herpes zoster, pruritus, alopecia, flushing, photosensitivity.

Other: Vasculitis, muscle cramps, hyperhidrosis, impotence, blurred vision, taste alteration, tinnitus.

A symptom complex has been reported which may include fever, myalgia, and arthralgia; an elevated erythrocyte sedimentation rate may be present. Rash or other dermatologic manifestations may occur. These symptoms have disappeared after discontinuation of therapy.

Angioedema: Angioedema has been reported in patients receiving VASOTEC (0.2%). Angioedema associated with laryngeal edema may be fatal. If angioedema of the face, extremities, lips, tongue, glottis, and/or larynx occurs, treatment with VASOTEC should be discontinued and appropriate therapy instituted immediately. (See WARNINGS.)

Hypotension: In the hypertensive patients, hypotension occurred in 0.9% and syncope occurred in 0.5% of patients following the initial dose or during extended therapy. Hypotension or syncope was a cause for discontinuation of therapy in 0.1% of hypertensive patients. In heart failure patients, hypotension occurred in 6.7% and syncope occurred in 2.2% of patients. Hypotension or syncope was a cause for discontinuation of therapy in 1.9% of patients with heart failure. (See WARNINGS.)

Clinical Laboratory Test Findings:

Serum Electrolytes: Hyperkalemia (see PRECAUTIONS), hyponatremia.

Creatinine, Blood Urea Nitrogen: In controlled clinical trials, minor increases in blood urea nitrogen and serum creatinine, reversible upon discontinuation of therapy, were observed in about 0.2% of patients with essential hypertension treated with VASOTEC alone. Increases are more likely to occur in patients receiving concomitant diuretics or in patients with renal artery stenosis. (See PRECAUTIONS.) In patients with heart failure who were also receiving diuretics with or without digitalis, increases in blood urea nitrogen or serum creatinine, usually reversible upon discontinuation of VASOTEC and/or other concomitant diuretic therapy, were observed in about 11% of patients. Increases in blood urea nitrogen or creatinine were a cause for discontinuation in 1.2% of patients.

Hemoglobin and Hematocrit: Small decreases in hemoglobin and hematocrit (mean decreases of approximately 0.3 g % and 1.0 vol %, respectively) occur frequently in either hypertension or heart failure patients treated with VASOTEC but are rarely of clinical importance unless another cause of anemia coexists. In clinical trials, less than 0.1% of patients discontinued therapy due to anemia.

Other (Causal Relationship Unknown): In marketing experience, rare cases of neutropenia, thrombocytopenia, and bone marrow depression have been reported.

Liver Function Tests: Elevations of liver enzymes and/or serum bilirubin have occurred.

Dosage and Administration: *Hypertension:* In patients who are currently being treated with a diuretic, symptomatic hypotension occasionally may occur following the initial dose of VASOTEC. The diuretic should, if possible, be discontinued for two to three days before beginning therapy with VASOTEC to reduce the likelihood of hypotension. (See WARNINGS.) If the patient's blood pressure is not controlled with VASOTEC alone, diuretic therapy may be resumed.

If the diuretic cannot be discontinued, an initial dose of 2.5 mg should be used under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and PRECAUTIONS, *Drug Interactions.*)

The recommended initial dose in patients not on diuretics is 5 mg once a day. Oosage should be adjusted according to blood pressure response. The usual dosage range is 10 to 40 mg per day administered in a single dose or in two divided doses. In some patients treated once daily, the antihypertensive effect may diminish toward the end of the dosing interval. In such patients, an increase in dosage or twice-daily administration should be considered. If blood pressure is not controlled with VASOTEC alone, a diuretic may be added.

Concomitant administration of VASOTEC with potassium supplements, potassium salt substitutes, or potassium-sparing diuretics may lead to increases of serum potassium (see PRECAUTIONS).

Dosage Adjustment in Hypertensive Patients with Renal Impairment: The usual dose of enalapril is recommended for patients with a creatinine clearance >30 mL/min (serum creatinine of up to approximately 3 mg/dL). For patients with creatinine clearance ≤30 mL/min (serum creatinine ≥3 mg/dL), the first dose is 2.5 mg once daily. The dosage may be titrated upward until blood pressure is controlled or to a maximum of 40 mg daily.

Heart Failure: VASOTEC is indicated as adjunctive therapy with diuretics and digitalis. The recommended starting dose is 2.5 mg once or twice daily. After the initial dose of VASOTEC, the patient should be observed under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and PRECAUTIONS, *Drug Interactions.*) If possible, the dose of the diuretic should be reduced, which may diminish the likelihood of hypotension. The appearance of hypotension after the initial dose of VASOTEC does not preclude subsequent careful dose titration with the drug, following effective management of the hypotension. The usual therapeutic dosing range for the treatment of heart failure is 5 to 20 mg daily given in two divided doses. The maximum daily dose is 40 mg. Once-daily dosing has been effective in a controlled study, but nearly all patients in this study were given 40 mg, the maximum recommended daily dose, and there has been much more experience with twice-daily dosing. In addition, in a placebo-controlled study which demonstrated reduced mortality in patients with severe heart failure (NYHA Class IV), patients were treated with 2.5 to 40 mg per day of VASOTEC, almost always administered in two divided doses. (See CLINICAL PHARMACOLOGY, *Pharmacodynamics and Clinical Effects.*) Oosage may be adjusted depending upon clinical or hemodynamic response. (See WARNINGS.)

Dosage Adjustment in Heart Failure Patients with Renal Impairment or Hyponatremia: In heart failure patients with hyponatremia (serum sodium <130 mEq/L) or with serum creatinine >1.6 mg/dL, therapy should be initiated at 2.5 mg daily under close medical supervision. (See OOSAGE ANO ADMINISTRATION, *Heart Failure,* WARNINGS, and PRECAUTIONS, *Drug Interactions.*) The dose may be increased to 2.5 mg b.i.d., then 5 mg b.i.d. and higher as needed, usually at intervals of four days or more, if at the time of dosage adjustment there is not excessive hypotension or significant deterioration of renal function. The maximum daily dose is 40 mg.

For more detailed information, consult your MSD Representative or see Prescribing Information. Merck Sharp & Dohme, Division of Merck & Co., Inc., West Point, PA 19486.

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